

EAST CENTRAL AND EASTERN EUROPE IN THE MIDDLE AGES, 450-1450

# Avar-Age Polearms and Edged Weapons

*Classification, Typology,  
Chronology and Technology*



Gergely Csiky



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BRILL

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*Edited by*

Florin Curta

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Cover illustration: Ring-pommel sword covered with gold decoration from Bócsa burial as a symbol power. Courtesy of the Hungarian National Museum.

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- 47 Spearheads of type P.III.B/1.c: 1. Košice–Šebastovce, grave No. 131 (Budinský-Krička – Točík 1991, 32–33, Taf. xviii/28.); 2. Čataj I. Zemanské-Gejzovce, grave No. 113 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121.)

- 48 Spearheads of type P.III.C (Egling-type): 1. Koronóc–Bakonyér, 2. Čataj I. Zemanské-Gejzovce, grave No. 176 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121.); 3. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 616 (Eisner 1952, 137, t. 65/8.); 4. Radvaň nad Dunajom–Žitavská Tôň, grave No. 11 (Čilinská 1963, 91, tab. VI/12.)
- 49 Spearheads of type P.III.C/3.e (Pfullingen-type) 1. Čataj I. Zemanské-Gejzovce, grave No. 77 (Hanuliak – Zábajník 1982, 498.); 2. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 777 (Eisner 1952, 163, t. 84/6.); 3. spearheads of Pfullingen-type after Stein 1967, 4. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 422 (Eisner 1952, 97, t. 40/8.); 5. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 453 (Eisner 1952, 103, t. 50/1.)
- 50 Spearheads of type P.III.D (Dorfmerking-type) 1. Környe, stray find (Salamon – Erdélyi 1971, 30, 56, 106, Taf. 28/5, 135.); 2. Környe, stray find (MNM 69.1.487; Salamon – Erdélyi 1971, 30, 56, 106, Taf. XVIII/7.); 3. Budapest XXI. Csepel–Háros, grave Nr. 5 (Nagy 1998, 148, Taf. 100/1.); 4. Budakalász–Dunapart, grave Nr. 1474; 5. Aradac–Mečka, grave Nr. 72 (Nad 1959, 61, 85, tab XVIII/13; Dimitrijević – Kovačević – Vinski 1962, 9–12.)
- 51 Spearheads of type P.III.E (openwork spearheads) 1. Kölked–Feketekapu B, grave No. 82 (Kiss 2001, 28, II. 42, Taf. 28, 9.); 2. Gâmbaş, stray find (Horedt 1958, 96, fig.9a/10–11.); 3. Gâmbaş, grave No. IX (Horedt 1958, 99, fig. 14/2, fig. 14/13.); 4. Teiuş, grave No. III (Horedt 1958, 104, Fig. 17/13.); 5. Kalaja Dalmaces (Albania) after Szentpéteri 1984, 243.
- 52 Spearheads of type P.IV.A/1 (Hooked spears) 1. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 524 (Eisner 1952, 119–120, Obr. 71/1; drawing by M. Husár); 2. Söjtör–Petőfi utca, grave No. 12 (Szóke 1994a, 10. tábla 1.); 3. Bergen, grave No. 8 (after Koch 1982.)
- 53 Spearheads of type P.IV.A/3: 1. Mór–Akasztódomb (Török 1954, 57., XII. tábla 26.); 2. Košice–Šebastovce, grave Nr. 225 (Budinský-Krička – Točík 1991, 47–48, Taf. xxx/11.); 4. Košice–Šebastovce, grave Nr. 67 (Budinský-Krička – Točík 1991, 18–19, Taf. VI/21.)
- 54 Spearheads of type P.IV.B: 1. Košice–Šebastovce, grave No. 228 (Budinský-Krička – Točík 1991, 48–49, Taf. xxx/6.); 2. Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.); 3. Košice–Šebastovce, grave No. 321 (Budinský-Krička – Točík 1991, 64–65, Taf. XLIV/7.); 4. Košice–Šebastovce, grave No. 48 (Budinský-Krička – Točík 1991, 14–15, Taf. II/1.)
- 55 Javelins and ferrules: 1. Valalíky–Všechsvätých, grave No. 46/83 (Zábajník 1995, Taf. III; Husár 2005, Tab. 12/13.); 2. Košice–Šebastovce grave No. 58 (Budinský-Krička – Točík 1991, 18, Taf. 5/7); 3. Košice–Šebastovce grave No. 162 (Budinský-

- Krička – Točík 1991, 38, Taf. XXIII/3); ferrules: 4. Valalíky–Všechsvätých grave No. 10; 5. Želovce grave No. 172; 6. Želovce grave 616; 7. Štúrovo grave No. 38; 8. Štúrovo grave No. 258 (after Husár 2005, Tab. 12.)
- 56 Spathae (E.I.A): 1. Budapest III. Óbuda, Szőlő utca (Kovrig 1955a, 33, 7. jegyzet; Kovrig 1955b, 167, No. 4; Nagy 1962, 72; Nagy 1973, 358, 361.; Simon 1991, 288; Nagy 1998, 45, Taf. 38/31.); 2. Kölked–Feketekapu A, grave No. 257 (Kiss 1996, 75, Taf. 56/1.); 3. Kölked–Feketekapu A, grave No. 39 (Kiss 1996, 29, 228, Taf. 26/19.)
- 57 Spathae (E.I.A): 1. Kölked–Feketekapu A, grave No. 264 (Kiss 1996, 77–78, Taf. 59/12.); 2. Kölked–Feketekapu A, grave No. 268 (Kiss 1996, 78–79, Taf. 59/10.); 3. Kölked–Feketekapu B, grave No. 336 (Kiss 2001, 115–117, Taf. 75/13.)
- 58 Spathae (E.I.A) 1. Környe, grave No. 8 (Salamon – Erdélyi 1971, 1415, Taf. 32/6; Simon 1991, 295.); 2. Környe, grave No. 16 (Salamon – Erdélyi 1971, 15, Taf. 32/5; Simon 1991, 296.); 3. Környe, grave No. 44 (Salamon – Erdélyi 1971, 18, Taf. 32/7; Simon 1991, 296.); 4. Környe, grave No. 66 (Salamon – Erdélyi 1971, 20, Taf. 33/4; Simon 1991, 296.)
- 59 Spathae (E.I.A): 1. Tiszafüred–Majoros, grave No. 44 (Garam 1995, 13, Taf. 123.); 2. Kölked–Feketekapu B, grave No. 470 (Kiss 2001, 152–153, Taf. 86/35.); 3. Kölked–Feketekapu B, grave No. 132 (Kiss 2001, 65–66, Taf. 41/25.)
- 60 Spathae (E.I.A) of the 8th century: 1. Želovce, grave No. 124 (Čilinská 1973, 57, XXII/16.); 2. Wien–XXIII. Liesing, grave No. 3 (Mossler 1948, 222.)
- 61 Double-edged swords with lenticular cross section (E.I.B): 1. Andocs – Újhalastó, grave No. 21 (Garam 1973, 134, 6. ábr 42; Simon 1991, 286.); 2. Bóly – Sziebert puszta B, grave No. 21 (Papp 1962, 185, XXVII. t. 4; Simon 1991, 288.); 3. Kiszombor O, grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 4. Aradac – Mečka, grave No. 31 (Nađ 1959, 58, Tab. VII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152, LXXIX/6; Simon 1991, 286.)
- 62 Byzantine swords: 1. Kölked–Feketekapu A, grave No. 259 (Kiss 1996, 75–76, Taf. 57); 2. Aradac–Mečka, grave No. 85 (Nađ 1959, 62, Tab. XXVII/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196., Abb. 2, 203–204.); 3. Čierny Brod 1. – Homokdomb, grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábajník 1995, No. 19.)
- 63 Double-edged ring pommel swords: 1. Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.); 2. Szegvár–Oromdűlő, grave No. 903, courtesy of G. Lőrinczy; 3. Kunszentmiklós–Bábonny 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.)
- 64 Single-edged swords (E.II.A). 1. Cserkút–szőlők, stray find (Kiss 1977, 18, Fig. 1/17; Simon 1991, 290.); 2. Győd–Máriahegy, grave No. 67 (Kiss 1977, 41, Fig. IX.); 3. Győr–Téglavető-dűlő, grave No. 494 (Börzsönyi 1905, 20–22; Fettich 1943, 31.); 4. Győr–Téglavető-dűlő, grave No. 484 (XJM 53.278.1379)

- 65 Single-edged swords (E.II.A) 1. Környe, stray find (Salamon – Erdélyi 1971, 30, Taf. 34/3; Simon 1991, 298.); 2. Kiskőrös–Rákóczi u. 49. (László 1940, 150, XXIV. t. 16.); 3. Kiskőrös–Városalatt, grave No. 193 (Horváth 1935, 50.); 4. Környe, grave No. 35 (Salamon – Erdélyi 1971, 17, Taf. 33/6.; Simon 1991, 296.); 5. Paks–Gyapa TO33, grave No. 12
- 66 Single-edged swords (E.II.A) 1. Kölked–Feketekapu A, grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.); 2. Kölked–Feketekapu A, grave No. 227 (Kiss 1996, 69, Taf. 52/8.); 3. Kölked–Feketekapu B, grave No. 106 (Kiss 2001, 43–44, Taf. 32/9.)
- 67 Single-edged swords (E.II.A): 1. Környe, grave No. 78 (Salamon – Erdélyi 1971, 21, Taf. 33/9, Taf. 12/51; Simon 1991, 296.); 2. Környe, grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); 3. Környe, grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 32/3, Abb. 4/2; Simon 1991, 297, 16. kép 18.); 4. Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428.)
- 68 Single-edged swords with crossguard (E.II.A/2) 1. Aiudul de Sus (Horedt 1956, 396; Horedt 1958a: 93, Fig.17/3; Horedt 1968, 71; Bóna 1986a, 116; Bóna 1989, 88.); 2. Baracs–Ágocs-tanya (Nagy 1901b, 285; Hampel 1905, I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, No. 244; Bóna 1982–83, 110–111.); 3. Brodski Drenovac–Plana, grave No. 14 (Vinski–Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV.); 4. Budapest x. Rákos, Ejtőernyőstorony, grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b.)
- 69 Single-edged swords with crossguard (E.II.A/2) 1. Komárno–8 Shipyard, grave No. 72 (Trugly 1987, 265–266, Taf. XVI/17.); 2. Komárno–8 Shipyard, grave No. 139 (Trugly 1993, 211–212, XLVII/13.) 3. Üllő I. –Disznójárás, grave 'A' (Horváth 1935, 31, XXII/7.); 4. Üröm–Borosjenői téglagyár (MNM 71/1906.1)
- 70 Single-edged swords with crossguard (E.II.A/2) 1. Váchartyán–Gosztonyi szőlőhegy, stray find (Ferenczy 1963, 101, 14 kép 3.); 2. Zalakomár–Lesvári dűlő, grave No. 210; 3. Zalakomár–Lesvári dűlő, grave No. 135 (Szőke 2002, 80, 14.)
- 71 Single-edged ring-pommel swords (E.II.B): 1. Biharkeresztes–Lencsésát (Mesterházy 1987, 222, 6. kép/1–2; Bóna 1990, 113124; Simon 1991, 287, II. kép 1. 21. kép 3.); 2. Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.); 3. Valea lui Mihai–Rétalj (Németi 1983, 145–146, Fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235, Fig. 265/5.)
- 72 Single-edged ring-pommel swords (E.II.B): 1. Bócsa (Fettich 1937, 123, Taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12., XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 2. Szegvár–Oromdűlő grave No. 335, courtesy of G. Lőrinczy; 3. Mandelos (Ercegović – Pavlović 1973–74, 108, Fig. 1, I. t. 1, Fig. III/1–3; Mrkobrad 1980, 152., LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.)



- 73 Single-edged swords with false edge (E.II.C): 1. Budapest XXI. Csepel – Kavicsbánya (Fettich 1926b, 2, Fig. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nemeskéri 1955, 194, 208; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1.5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180.); 2. Čataj I. – Zemanské-Gejzove, grave No. 60 (Hanuliak – Zábajník 1982, 498; Zábajník 1995, No. 17, Abb. 4.); 3. Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele); grave No. 7 (I.) (Hekler 1909, 97–105; Fettich 1926a, 27–28.; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34); 271 (51); Bóna 1982–83, 62–64, No. 20a–d, Taf. 27–28, 35.9; Garam 1994–95, 134, 8. kép.)
- 74 Single-edged swords with false edge (E.II.C): 1. Komárno–8 Shipyard, grave No. 30 (Trugly 1987, 256, Abb. 3.; Taf. v/6.); 2. Košice–Šebastovce, grave No. 161 (Budinský-Krička – Točík 1991, 38; Taf. XXII/16.); 3. Tarnaméra, Urak dűlő, grave No. x (Szabó 1965, 42, VIII. t. 1–3; Simon 1991, 307, 11. kép 2.); 4. Törökbalint, site No. 36/25, grave No. 2 (Kovrig 1957, 120., XIX. t. 27–29; MRT 7. 347–348; Simon 1991, 310.); 5. Želovce, grave No. 78 (Čilinská 1973, 49, Taf. XIV/20–21.)
- 75 Slightly curved sabres (E.III.A): 1. Bányog–Gyűrhegy, grave No. 8 (Lovas 1929b, 255–257, Fettich 1943, 7.); 2. Brodski Drenovac–Plana, grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV/156.); 3. Cicău, grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271. Fig 4/1.); 4. Holiare, grave No. 375 (Točík 1968a, 66, Taf. LXIII/15.)
- 76 Slightly curved sabres (E.III.A): 1. Mosonszentjános–Kavicsbánya, grave No. 27 (Fettich 1927, 166–168., v/2.); 2. Želovce, grave No. 79 (Čilinská 1973, 49, Taf. xv/1.); 3. Želovce, grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1.)
- 77 Curved sabres (E.III.B): 1. Ivánca–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5.); 2. Biatorbágy–Hosszúrétek (site: MO PM 016); grave No. 35 (Horváth Reményi Tóth 2004, 3031, 78. képek); 3. Kecskemét–Ballószög–Karácsonyi szőlő, grave No. 1 (Szabó 1939, 185–187, Taf. I, Abb. 1.)
- 78 Curved sabres (E.III.B) 1. Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47.); 2. Kehidakustyán–Kehida, Központi Tsz-major, grave No. 106 (Szóke 2002, 77, 9/c.); 3. Kiskassa–Téglaház, stray find (Hampel 1897, 144.; CXLVII; Hampel 1905 III. Taf. 276.); 4. Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380, III. Taf. 277.); 5. Košice–Šebastovce, grave No. 221 (Budinský-Krička – Točík 1991, 46–47, Taf. xxviii/17.)
- 79 Curved sabres (E.III.B) 1. Košice–Šebastovce, grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. xxxvi–xxxviii.); 2. Szeged–Átokháza (Csallány 1946–48, 350–352.); 3. Szentés–Kaján, grave No. 33 (Korek 1943, 6, XLIV. t. 7.); 4. Tápiószele–Somogyi B. út 21. (Dinnyés 1973, 45, x./16.)

- 80 Curved sabres (E.III.B) 1. Tiszakécske–Óbög, grave No. 1 (Garam 1991a, 129, 131, 2 kép 7; 3. kép 2.); 2. Valalíky–Všechvátých, grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153.); 3. Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63.; Taf. 7/2.)
- 81 Strongly curved sabres (E.III.C) 1. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, Abb. 2., 143–147, Abb. 3–5.); 2. Igar–Vámszőlőhegy, Petőfi u. 56. complex No. 'III' (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14.); 3. Komárno–8 Shipyard, grave No. 142 (Trugly 1993, 213–214, Taf. L/4.); 4. Želovce, grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/L.)
- 82 Short and narrow seaxes (E.IV.A–B) 1. Környe, grave No. 18 (Salamon – Erdélyi 1971, 15.); 2. Környe, grave No. 97 (Salamon – Erdélyi 1971, 23, Taf. 15; Simon 1991, 297.); 3. Budapest XIV. Zugló, Népstadion, grave No. 5 (Lipták 1963, 331; Nagy 1973, 201–202; Lipták 1983, 51, 62, 78–88, 90; Nagy 1991, 443, No. 43; Nagy 1998, 109, II. Taf. 84B/2.)
- 83 Broad seaxes (E.IV.C) 1. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 124 (Eisner 1952, 41–42, Obr. 19/5.); 2. Komárno–8 Shipyard, grave No. 78 (Trugly 1987, 268, Abb. 8., Taf. xx/6.); 3. Kőlked–Feketekapu A, grave No. 324 (Kiss 1996, 91–92, Taf. 68/12.); 4. Solymár–Dinnye-hegy, grave No. 20 (Török 1994, 10, 31, Taf. IX/1.)
- 84 Long seaxes (E.IV.D) 1. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 412 (Eisner 1952, 94–95, Obr. 47/1.); 2. Dunaszeg–Gyula-major (Hédervár–Gyulamajor) (Lovas 1929b, 49; Fettich 1943, 7, Taf. XXXVIII. 1a–1b.); 3. Valalíky–Všechvátých, grave No. 42 (Pástor 1982, 307–308, Obr. 11/1.); 4. Valalíky–Všechsvátých, grave No. 84 (Pástor 1982, 315, Obr. 16/1.)
- 85 Ring pommels: 1. Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.); 2. Valea lui Mihai–Rétalj (Németi 1983, 145–146, Fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235, Fig. 265/5.); 3. Mandelos (Ercegović – Pavlović 1973–74, 108, Fig. 1, I. t. 1, Fig. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 4. Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21.)
- 86 Pommels: 1. MG 1, 2. MG 2, 3. MG 4, 4. MG 3
- 87 Hilt caps: 1. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5.); 2. Ozora–Tótipuszta, grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61, Taf. 62/8.); 3. Košice–Šebastovce, grave No. 94 (Budinský–Krička – Točík 1984, 174, Obr. 1.; Obr. 4–5; Budinský–Krička – Točík 1991, 25–26, Taf. XII/7.)



- 88 Ring-pendants and rhombic rivets: 1. Szegvár–Sáppoldal (Bóna 1979, 5., 8., 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18.); 2. Kölked–Feketekapu A, grave No. 257 (Kiss 1996, 75, Taf. 56/1.); 3. Kölked–Feketekapu A, grave No. 260 (Kiss 1996, 76, Taf. 57/1.); 4. Zsámbok, grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14.); 5. Kölked–Feketekapu A, grave No. 107 (Madaras 1986, 92, 4. ábra (térkép); Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.)
- 89 Decorated sword hilts: 1. Košice, Archaeological Institute, unknown site, 2. Sasanian sword (RGZM Inv. No. O. 38822; after Bohner – Ellmers – Weidemann 1972, 42.); 3. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5.)
- 90 The hilt of the single-edged sword of Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1; Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.)
- 91 Early Avar crossguards
- 92 Crossguards of type CG. 4
- 93 Crossguards of type CG.5 and the structure of crossguard type CG.5.a: Baracs–Ágocs-tanya (Nagy 1901b, 285; Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, No. 244; Bóna 1982–83, 110–111.)
- 94 Crossguards of type CG.6: 1. Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.); 2. Budapest X. Rákos, Ejtőernyőstorony, grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b.)
- 95 Crossguards of type CG.7: 1. Čierny Brod I. – Homokdomb, grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábójník 1995, No. 19.); 2. Garabonc I. Grave No. 55 (Szőke 1992a, 504, Taf. 20.)
- 96/1–2 Decorations of frame-bands used on sword scabbards (after Simon 1991, 12. kép)
- 97 Representations of sword suspension from the 7th century: 1. Representation of a Chinese envoy (Afrasiab I. building, after Al'baum 1971, ris. 11); 2. Representation of Korean envoys (Afrasiab I. building, after Al'baum 1971, ris. 11); 3. Representation of a Hephtalite envoy (Afrasiab I. building, after Al'baum 1971, ris. 11); 4. Representation of two-point suspension on the David-plate from Cyprus (629–630) (drawing by Magda Éber)
- 98 The suspension of spathae: S.1 and S.2
- 99 The basic types of P-shaped suspension loops
- 100 P-shaped suspension loops: S.4.a: 1. Mór–Akasztódomb, grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302.); 2. Csanytelek–Felgyői határút, grave No. A (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lőrinczy – Szalontai 1993, 282, Taf. VII.); 3. Fajsz–Garadomb, grave No. 2 (Balogh – Kőhegyi 2001, 333–363.); 4. Dabas

- (Gyón)–Paphegy, grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6; 16. kép 12; Simon – Székely 1991, 188., 191–192., 193/195.); 5. Tápé-85. számú kútkörzet, grave No. 11 (Simon 1993b, 31–34., 1–6. képek); 6. Zamárdi–Réti földek III. (Simon 1991, 311.); 7. Mali Idoš, grave No. 72 (Gubitzta 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301., 16. kép 16.); 8. Környe, grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); 9. Gátér–Vasútállomás, grave No. 212 (Kada 1906, 215, 218. és c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20.); 10. Környe, grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 32/3, Abb. 4/2; Simon 1991, 297, 16. kép 18.); 11. Zsámbok, grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14.); 12. Kölked–Feketekapu A, grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.). 13. Csengőd–Páhipuszta, Kenyérvágóhalom (Bolevár–Páterhalom, Pivarcsi János földje) (Fettich 1926a, Taf. v1/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40.); 14. Börcs–Nagydomb, grave No. 10 (Tomka 2005, 155/160.); 15. Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, 11. kép 1–4; Simon 1991, 299, 16. kép 15.); 16. Budapest XXI. Csepel–Kavicsbánya (Fettich 1926b, 2, Fig. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nemeskéri 1955, 194, 208; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13.; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180.); 17. Zsámbok, grave No. 2 (Garam 1983, 144, Abb. 5/7, 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.); 18. Csákerény–Orondpuszta, grave No. 150 (Kiss 1962, 70; Simon 1991, 290.); 19. Kunszentmiklós–Bábony, grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. v–VIII.)
- 101 P-shaped suspension loops: S.4.b: 1. Bačko Petrovo Selo–Čik, grave Nr. 28 (Bukner 1968, 172, T. LIX/1; Simon 1991, 289, 16. kép 11; ADAM, 30; Bugarski 2009, 39, 116–117, Fig. 102, T.VI.); 2. Szeged–Fehértó A, grave Nr. 26 (Csallány 1939, 137; Madaras 1981, 35, 3. t.; Simon 1991, 305; Madaras 1995b, 17, Pl. 4/14.); 3. Szeged–Fehértó A, grave Nr. 34 (Madaras 1995b, 18, Pl. 6/11.), 4. Zsámbok, grave Nr. 2 (Garam 1983, 144, Abb. 5/7–9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.); 5. Törökbálint, site Nr. 36/25, grave Nr. 1 (Kovrig 1957, 119–120, XVII. T. 1–2., XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8.); 6. Visznek–Kecskehegy, grave Nr. 68 (Török 1975a, 334, 341, 343, Fig: 6/1, 16; Simon 1991, 311, 16. kép 9.); 7. Szegvár–Sápoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18.)
- 102 P-shaped suspension loops: S.4.c: 1. Győr–Téglavető–dűlő, grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39, XIV.); 2–3. Gátér–Vasútállomás, stray find (Fettich 1926a, 7.; Fig. x/24–24a; Simon 1991, 292, 16. kép 1–2.); 4. Szárazd (Fettich 1926a, 7, x. t. 1; Bóna 1982–83, 126–127, 11. j.; Simon 1991, 305,

16. kép 3; Kovács 2001, 185, 187–190, 7. kép 10.); 5. Novi Kneževac (Hampel 1900, 170–175; Hampel 1905, 357–360; Vinski 1958, 11. tab. IV. 1–12; Dimitrijević – Kovačević – Vinski 1962, 23. Abb. 3; Mrkobrad 1980, LXXIX/1; Simon 1991, 303, 16. kép 4.); 6. Kiszombor O, grave No. 2 (Csallány 1939, 125–126, 1. t. 1–1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 7. Deszk G, grave No. 8 (Csallány 1939, 127, 129, 1. t. 2–2a, 2. kép 2–2a; Simon 1991, 291, 16. kép 6; Lőrinczy 1994, 113–114.); 8. Aradac–Mečka, grave No. 31 (Nad 1959, 58, Tab. VIII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152., LXXIX/6; Simon 1991, 286.); 9. Aradac–Mečka, grave No. 43 (Nad 1959, 59, Tab. IX/9.); 10. Biatorbágy–Hosszúrétek (MO PM 016 lh.), grave No. 35 (Horváth – Reményi – Tóth 2004, 3031, 78. képek); 11. Iváncsa–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5.); 12. Kecskemét–Ballószög–Karácsonyi szőlő, grave No. 1 (Szabó 1939, 185–187, Taf. 1, Abb. 1.)
- 103 Triple-arched suspension loops (S.6): 1. Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137138, Taf. 4–5.); 2. Kecel–Schwacho föld (László 1955, 232–233, Fig. 64, LI–LII. t., LIII. t. 25; Biczó 1984, 27, 56. 15. ábra (térkép) 173. lh.; Simon 1991, 294, 15. kép 2.); 3. Tiszaalpár–Várdomb, grave No. A (Fettich 1926a, 8, Fig. x/26; Bóna – Nováki 1982, 25, 98; Simon 1991, 308, 15. kép 3.); 4. Bócsa (Fettich 1937, 123, Taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230, XLIII. T. 1., 11–12., XLIV–XLV. T. 1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 5. Kunszentmiklós–Bábony, grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. v–VIII.); 6. Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, 11–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); 7. Tiszaalpár–Tiszaújfalu (Simon 1991, 307, 15. kép 7.); 8. Csengele–Jójárt, grave No. 1 (Csallány 1939, 911, 1. tábla 3–3a, 11. tábla; Simon 1991, 290, 15. kép 8.); 9. Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.); 10. Mandelos (Ercegović – Pavlović 1973–74, 108, Fig. 1, 1. t. 1, Fig. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 11. Tiszavárkony–Hugyin part (after Simon 1991)
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# Abbreviations

AASzeg	Acta Antiqua et Archaeologica (Szeged)
ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae (Budapest)
Agria	Agria. Az Egri Múzeum Évkönyve (Eger)
AKorr	Archäologisches Korrespondenzblatt (Mainz)
Alba Regia	Alba Regia. Annales Musei Stephani Regis (Székesfehérvár)
AMN	Acta Musei Napocensis (Cluj)
AnnHN	Annales Historico-Naturales Musei Nationales Hungarici (Budapest)
Antaeus	Antaeus. Communicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae (Budapest)
AntHung	Antiquitas Hungarica (Budapest)
AnthrH	Anthropologia Hungarica (Budapest)
AOH	Acta Orientalia Academiae Scientiarum Hungaricae (Budapest)
AP	Arheološki Pregled (Beograd)
APA	Acta Praehistorica et Archaeologica (Berlin)
AR	Archeologické Rozhledy (Praha)
ArchA	Archaeologia Austriaca (Wien)
ArchÉrt	Archeológiai Értesítő (Budapest)
ArchHist	Archaeologia Historica (Brno)
ArchHung	Archaeologia Hungarica (Budapest)
ArchKözl	Archeológiai Közlemények (Budapest)
Arrabona	Arrabona. A Győri Xantus János Múzeum Évkönyve (Győr)
ASFontes	Archaeologica Slovaca Fontes (Bratislava)
AT	Antik Tanulmányok. Studia Antiqua (Budapest)
AVANS	Archeologické výskumy a nálezy na Slovensku v roku ... (Nitra)
AW	Antike Welt. Zeitschrift für Archäologie und Urgeschichte (Feldmeilen)
BÁMÉ	A Béri Balogh Ádám Múzeum Évkönyve (Szekszárd)
BÁMF	A szekszárdi Balogh Ádám Múzeum Füzetei (Szekszárd)
BAR IS	British Archaeological Reports—International Series
BHBl	Burgenländische Heimatblätter (Eisenstadt)
BJ	Bonner Jahrbücher der Rheinischen Landesmuseums in Bonn und des Vereins von Altertumsfreunden in Rheinlande (Köln)

BRGK	Bericht der Römisch-Germanischen Kommission (Berlin)
BRTÉ	A Békésvármegyei Régészeti és Művelődéstörténeti Társulat Évkönyve (Gyula)
BTTÉ	A Bács-Bodrog vármegyei Történeti Társulat Évkönyve (Zombor)
BudRég	Budapest Régiségei (Budapest)
BVbl	Bayerische Vorgeschichtsblätter (München)
ByzSlav	Byzantinoslavica. Revue Internationale des études byzantines (Praha)
BZ	Byzantinische Zeitschrift (München)
CommArchHung	Communicationes Archaeologicae Hungaricae (Budapest)
Cumania	Cumania. A Bács-Kiskun megyei Múzeumok Közleményei (Kecskemét)
Dacia	Dacia. Revue d'archéologie et d'histoire ancienne (București)
DissPann	Dissertationes Pannonicae (Budapest)
DMÉ	A Debreceni Déri Múzeumi Évkönyve (Debrecen)
DMK	A Déri Múzeum Régészeti Osztályának Ismeretterjesztő Közleményei (Debrecen)
Dolg	Dolgozatok az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából (Kolozsvár, 1910–19)
Dolg	Dolgozatok a Szegedi Tudományegyetem Régiségtudományi Intézetéből (Szeged, 1925–43)
DuDolg	Dunántúli Dolgozatok (Pécs)
DVMK	Debrecen sz. kir. város Déri Múzeumának Kiadványai (Debrecen)
EAZ	Ethnographisch-Archäologische Zeitschrift (Berlin)
EISz	Erdélyi Irodalmi Szemle (Kolozsvár)
EMÉ	Az Egri Múzeum Évkönyve (Eger)
ESA	Eurasia Septentrionalis Antiqua (Helsinki)
Ethn	Ethnographia (Budapest)
FBBW	Fundberichte aus Baden-Württemberg (Stuttgart)
FBVFBW	Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg (Stuttgart)
FMS	Frühmittelalterliche Studien (Berlin)
FolArch	Folia Archaeologica (Budapest)
FontArchHung	Fontes Archaeologici Hungariae (Budapest)
FÖ	Fundberichte aus Österreich (Wien)
FUFG	Zeitschrift des Fördervereins für Ur- und Frühgeschichte



Germania	Germania. Anzeiger der Röm.-Germ. Kommission des Deutschen Archäologischen Instituts (Mainz)
GRBS	Greek, Roman and Byzantine Studies (Duke University)
HCK	Historica Carpathica (Košice)
Hesperia	Hesperia. The Journal of the American School of Classical Studies at Athens (Athens)
HMRK	Heves Megyei Régészeti Közlemények (Eger)
HOMÉ	A Hermann Ottó Múzeum Évkönyve (Miskolc)
IPEK	Jahrbuch für Prähistorische und Ethnographische Kunst (Berlin)
JAMÉ	A nyíregyházi Jósa András Múzeum Évkönyve (Nyíregyháza)
JAOS	Journal of the American Oriental Society (New Haven)
Jáskunság	Jáskunság (Szolnok)
JfA	Jahrbuch für Altertumskunde (Wien)
JOÖMV	Jahrbuch des oberösterreichischen Musealvereines (Linz)
JÖAI	Jahreshefte des Österreichischen Archäologischen Institutes in Wien (Wien)
JPMÉ	A pécsi Janus Pannonius Múzeum Évkönyve
JRGZM	Jahrbuch des Römisch-Germanischen Zentralmuseums (Mainz)
KMK	A Komárommegyei Múzeumok Közleményei (Tata)
KSIA	Kratkie soobshcheniia Instituta Arheologii AN SSSR (Moskva)
KSIIMK	Kratkie soobshcheniia Instituta Istории Material'noj Kul'tury (Moskva—Leningrad)
LJAZU	Ljetopis Jugoslavenske Akademije Znanosti i Umjetnosti (Zagreb)
MAA	Monumenta Avarorum Archaeologica Hungariae (Budapest)
MAGW	Mitteilungen der Anthropologischen Gesellschaft (Wien)
MAIET	Materialy po arkheologii, istorii i etnografii Tavriki (Simferopol)
MBV	Münchner Beiträge zur Vor- und Frühgeschichte (München)
MCA	Materiale și Cercetări Arheologice (București)
MFME—StudArch	A Móra Ferenc Múzeum Évkönyve—Studia Archaeologica (Szeged)

MHBV	Materialhefte zur Bayerische Vorgeschichte (Kallmünz, München)
MGA	Monumenta Germanorum Archaeologica Hungariae (Budapest)
MIA	Materialy i issledovaniia po arkheologii SSSR
MittArchInst	Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften (Budapest)
MKBKM	Múzeumi kutatások Bács-Kiskun megyében (Kecskemét)
MKCSM	Múzeumi kutatások Csongrád megyében (Szeged)
MÓK	Magyar Őstörténeti Könyvtár (Szeged)
MprKom	Mitteilungen der prähistorischen Kommission (Wien)
MRT	Magyarország Régészeti Topográfiája (Budapest)
MTAK (II)	A Magyar Tudományos Akadémia Társadalmi-Történeti Osztályának Közleményei (Budapest)
NfDV	Nachrichtenblatt für Deutsche Vorzeit (Leipzig)
OA	Opuscula Archaeologica (Zagreb)
Offa	Offa. Berichte und Mitteilungen zur Urgeschichte, Frühgeschichte und Mittelalterarchäologie (Kiel)
OJA	Oxford Journal of Archaeology (Oxford)
OMRTÉ	Az Országos Magyar Régészeti Társulat Évkönyve (Budapest)
ORETÉ	Az Országos Régészeti és Embertani Társulat Évkönyve (Budapest)
RA	Rossijskaia Arkheologiia (Moskva)
RE	Paulys Realenzyklopädie der klassischen Altertumswissenschaften (Stuttgart)
RégFüz	Régészeti Füzetek (Budapest)
RGA	Reallexikon der Germanischen Altertumskunde (Berlin)
RKM	Régészeti Kutatások Magyarországon—Archaeological Investigations in Hungary (Budapest)
RVM	Rad Vojvodanskih Muzeja (Novi Sad)
SA	Sovetskaia Arkheologiia (Moskva)
SAI	Arkheologiia SSSR. Svod arheologicheskikh istochnikov (Moskva)
SCIV	Studii și Cercetări De Istorie Veche (București)
SCIVA	Studii și Cercetări de Istorie Veche și Arheologie (București)
SHN	Studia Historica Nitriensia (Nitra)
SLA	Slovenská Archeológia (Bratislava)
SMK	Somogyi Múzeumok Közleményei (Kaposvár)
SMSS	Sborník Muzeálnej slovenskej spoločnosti (Turčianský Svätý Martin)

SODF	Südost (deutsche) Forschungen (Leipzig)
Spraw.Arch.	Sprawozdania Archeologiczn, Institut Historii Kultury Materialnej Polska Akademia Nauk (Wroclaw)
Starinar	Starinar (Beograd)
StCom	Studia Comitatus (Budapest)
ŠtZ	Študijné Zvesti Archeologického Ústavu Slovenskej Akadémie Vied (Nitra)
SzMMÉ	A Szolnok Megyei Múzeumok Évkönyve (Szolnok)
SzSz	Székesfehérvári Szemle (Székesfehérvár)
SzVMK	A Szegedi Városi Múzeum Kiadványa (Szeged)
TTMÉ	A Természettudományi Múzeum Évkönyve (Budapest)
VAH	Varia Archaeologica Hungarica (Budapest)
VAMZ	Vjesnik Arheološkog Muzeja u Zagrebu (Zagreb)
Viking	Viking. Tidsskrift for norrøn arkeologi (Oslo)
VMMK	A Veszprém Megyei Múzeumok Közleményei (Veszprém)
WMMÉ	A Wosinsky Mór Múzeum Évkönyve (Szekszárd)
ZAM	Zeitschrift für Archäologie des Mittelalters (Köln)
ZfE	Zeitschrift für Ethnologie (Berlin)
ZGy	Zalai Gyűjtemény (Zalaegerszeg)
ZM	Zalai Múzeum (Zalaegerszeg)

## Abbreviations of Museums

AÚ SAV	Archeologický ústav Slovenská Akadémia Vied, Nitra
AÚ SAV Košice	Archeologický ústav Slovenská Akadémia Vied, Košice
IKM	István Király Múzeum, Székesfehérvár
MFM	Móra Ferenc Múzeum, Szeged
MNM	Magyar Nemzeti Múzeum, Budapest
MTA RI	Magyar Tudományos Akadémia Régészeti Intézete, Budapest
SNM	Slovenské Národné Múzeum, Bratislava
XJM	Xantus János Múzeum, Győr



## Introduction

The Carpathian Basin, being the westernmost fringe of the vast Eurasian steppe zone, at the crossroads of the Balkans, Central and Eastern Europe, has been exposed to various cultural influences throughout its history. The region witnessed many population movements, migration of nomadic and semi-nomadic peoples from the steppes, beginning with the Scythians, Sarmatians, Huns, and ending with Avars, Magyars, Pechenegs, Cumans, and Alans.

One of the most consequential migrations was that of the Avars, which resulted in significant political transformations, as their polity lasted for more than 200 years, from the late 6th century to the early 9th century. The establishment of the Avar qaganate brought stability to the region, and the Avar culture left recognizable and indelible traces in the physical and cultural landscape of the Carpathian Basin. Ever since the 19th century, archaeologists have revealed thousands of cemeteries with tens of thousands of burials, and several hundred settlements dated to the age of the Avars.

The archaeology of the Avars in Austria, Croatia, Hungary, Romania, Serbia and Slovakia has by now clarified a broad range of issues regarding the arrival and gradual settlement of the steppe nomads, the chronology of the Avar Age, ethnic questions such as the involvement of the Slavs, the hierarchical structure of Avar society, as well as the development of craft traditions. Every one of these issues is closely involved in the study of Avar-age arms and armour.

The Avar Age was one of the most important periods in the early medieval history of the Carpathian Basin. More than 60,000 richly furnished burials are known from this period spanning from 568 AD to the first half of the 9th century.<sup>1</sup> The burial customs of the period allow us to reconstruct the material culture of the Avars, among other things their arms and armour.

The study of the Avar armament dates back to the beginnings of early medieval archaeology in the Carpathian Basin,<sup>2</sup> as scholars have long noted the fact that the Avars were described primarily as warriors in Byzantine and

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1 In 1993, 2,475 Avar age cemeteries were known (the database of Avar age sites known as ADAM). There are several estimates of the total number of Avar age burials, with István Bóna suggesting between 35,000 and 40,000 (Bóna 1988, 437), and more recent studies going as high as 60,000 (see: Daim 2003, 463; Vida 2003, 304; Langó 2007, 188, with note 84).

2 For the beginnings of the research on Avar weaponry, see chapter 1.1.

Carolingian sources.<sup>3</sup> As a result, the deposition of weapons in 'Avar' burials was regarded as the archaeological fossil of these Avar warriors, while the weapons themselves served for reconstruction of the original fighting equipment of the deceased individuals.<sup>4</sup>

The deposition of weapons in burials deserves attention for several reasons. First, as part of the funeral it can offer crucial data for the analysis of the burial rite itself. Second, the types, quality and quantity of the buried weapons, albeit with some limits,<sup>5</sup> can refer to the fighting equipment, social, financial or legal status of the buried person.<sup>6</sup>

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- 3 For sources on the Avars, see: Szádeczky-Kardoss 1992, while the most detailed discussion is in Pohl 2002, 4–10. Modern historians often reproduce biases inherent in such sources, see Sinor 1981, 133–134. Theodore Synkellos, who witnessed the Avar siege of Constantinople in 626, described the Avars as people 'whose life is war' (Makk 1975, 16, 78).
  - 4 Researchers disagree about the utility of weapons and weapon combinations found in graves for the reconstruction of original armament. According to a view the weapons buried in graves can be used directly for the reconstruction of such armament: Steuer 1968, 18–87; Steuer 1970, 352–353. reconstructed the history of early medieval armament using primarily archaeological finds. Frank Siegmund (2000, 177–194) separated functional groups based on combinations of weapons using statistical methods, while Robert Reiß (2007) examined the relationship of close and distant combat based on these weapon combinations. It is already evident that the weapon burial rite was influenced by several factors besides armament and fighting methods. Heinrich Härke (1992; Härke 1997, 119–127) combined the interpretive methods of the Continental (German) and Anglo-Saxon schools and proposed a novel approach to Anglo-Saxon burials with weapons. His student, Howard Williams (2005, 264–265) similarly emphasised the commemorative function of these weapons using the same set of data.
  - 5 Burial contexts would have depended on the intentions of at least three decision makers: the will of the deceased, the will of the family, and the customs of the community. For the definition of 'intentional data', see Härke 1993, 141–46. A cautionary tale for illustrating why such weapon combinations should not be used for the reconstruction of the original armament is a burial from Szentés-Derekegyháza, in which a shield boss (umbo) was deposited in a partial horse burial together with archery equipment (Csallány 1939, 116–119), a combination of weapons that is unlikely to have been functional.
  - 6 An optimistic approach to the reconstruction of armament is that of Heiko Steuer (1968, 18–87; Steuer 1970, 348–383), while Heinrich Härke (1992) and Anne Nørgård Jørgensen (1997, 149–163; Jørgensen 1999, 15–18) are more sceptical. The social implications of this armament are discussed in Heiko Steuer 1982 and Steuer 1987, 189–236. Sebastian Brather (2004b, 1–58) studied the relationship between the age of the deceased and the grave goods. The relation between the legal status and these weapon burials is a well studied field in German archaeology. Heiko Steuer (1968, 28–39) studied the armament in relation to law ('Volksrecht'). Similarly Dagmar Hüpper-Dröge (1981, 106–127) studied the weapons and defensive armour

The weapons are basically functional artefacts, since their original aim was to injure or destroy an enemy during battle or to provide protection against similar equipment used by an opposing foe, and therefore the shape and physical attributes of these weapons would have been crucial for the warrior's survival. Although these weapons continued to follow contemporary fashions and trends, they also drew upon greatest functional efficacy provided by the highest level of manufacturing technology of the period. In regard to this, it is also possible to draw conclusions from the shape, physical attributes and manufacturing techniques of the weapons in respect of their utility. The use of these weapons has primarily been examined by experimental archaeologists, though in the Carpathian Basin this field has focused mainly on archery and very little study done on the efficacy of polearms and edged weapons.<sup>7</sup>

The study of polearms and edged weapons is facilitated by the frequency of these weapons as grave goods in Avar-age burials from the entire area of the Avar qaganate. The subject of the present work is the classification, chronology, distribution and social interpretation of two characteristic Avar-age close combat weapon types: the polearms and edged weapons. The great number and the formal diversity of these artefacts allow us to address a series of questions relating to the problems discussed above concerning their interpretation, and to determine the cultural relations of these artefacts and other aspects

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based on Frankish legal sources. Ethnic questions related to armament were examined by Frank Siegmund (2000, 177–194), according to whom it is possible to distinguish between Franks and Alamans on the basis of statistical analysis of these weapon combinations and the proportions and quantities of some weapon types. The idea has been rejected by Sebastian Brather (2000, Brather 2004a) according to whom it is impossible to identify the ethnic identity of the deceased on the basis of grave goods alone. Robert Reiß (2007) attempted to reconstruct the original armament using burial data in order to distinguish functional combinations for close and distant combat, respectively.

7 For the definitions of experimental archaeology see: Coles 1979; Ascher 1961; Fansa 1996, Fansa 2002. A good example for the contributions made in this field is the study of Holger Riesch on the archery of the Merovingians which reconstructed bows and examined their efficacy (2002). Riesch also used metallographic analysis to reconstruct a Merovingian lamellar armour (which is very similar to those in use by Avars) in order to test its defense capabilities against different types of arrowheads (Becker – Riesch 2002, 597–606). The major activity of experimental archaeology in Hungary was the reconstruction of 'Avar' and 'Magyar' composite bows (Fábián 1980–81; Szöllőssy 1992, 349–374; Szöllőssy 2001, 275–293; Szöllőssy 2004, 53–61). Much less attention was drawn to close combat weapons, a remarkable exception being Marcus Junkelmann's work (1990–92) on Roman cavalry equipment. The most recent results of Hungarian experimental archaeology are presented by Levente Igaz (2007, 161–169).



of Avar-age material culture, ranging from the Merovingian west to the vast steppe lands of Eurasia.

## 1 Objectives

The original objective of the doctoral research, upon which the present book is based, was to create a complete database of the polearms (pointed weapons with a long wooden shaft)<sup>8</sup> and edged weapons (weapons with a long iron blade used both for cutting and thrusting)<sup>9</sup> from the settlement area of the Avars (i.e. the Avar Qaganate) for the whole duration of the Avar Age (from 568 AD to the first half of the 9th century). This database served as the basis for classifying these artefacts, examining their typological development and offering a chronology by the study of accompanying grave goods<sup>10</sup> or from the stratigraphy of the cemeteries in which they occur.<sup>11</sup> The chronology of these weapons is also compared with the chronological schemes of neighbouring areas beyond the Carpathian Basin. The distribution of polearms and edged weapons by types and variants have been mapped in order to reveal regional groups or—in some cases—even workshop traditions.<sup>12</sup>

A primary aim of this study is to outline the cultural contacts of the various weapon types outside the Carpathian Basin and to provide their

8 *'Stichwaffen'* or *'Stangenwaffen'* in German and *'древковое оружие'* in Russian.

9 *'Hiebwaffen'*, *'Blankwaffen'* or *'Klingenwaffen'* in German, *'cutting-weapons'*, *'edged weapons'* or *'blade weapons'* in English and *'клинковое оружие'* in Russian.

10 The chronology of the Avar age and its weapons is based on coin-dated burial assemblages (Garam 1992, 135–250; for the method known as coin-mirror (*'Münzspiegel'*) see: Martin 2008, 162–163) and the typochronology and seriation of multi-part belt sets (for seriation: Stadler 1993, 445–457; Stadler 1985; Zábojník 1991, 219–321; for typochronology: Garam 1999/2000, 379–391; Garam 2001, 114–157).

11 Several Avar cemeteries were examined by horizontal stratigraphical methods: Alattán-Tulát (Böhme 1965), Devínska Nová Ves (Keller – Bierbrauer 1965, 377–397), Žitavska Tůň (Zábojník 1985, 329–345), Štúrovo (Wiedermann 1985, 347–378), Sommerein am Leithagebirge (Daim – Lippert 1984), Leobersdorf (Daim 1987), Tiszafüred (Garam 1995), Kölked–Feketekapu B (Kiss 2001).

12 The spatial distribution and mapping of artefacts are crucial in spite of their distorting factors. Several examples attest that the areas with the highest number of artefacts are not necessarily the production zones: most of the 11th century sword blades with 'VLFBERTH' inscriptions are found in Scandinavia, while these artefacts were manufactured in workshops along the Rhine (Eggert 2005, 270–271).

wider context between the Mediterranean,<sup>13</sup> the Merovingian area<sup>14</sup> and the Eurasian Steppes.<sup>15</sup> One of the most important problems to address

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- 13 Detecting Mediterranean, mostly Byzantine, contacts of the Avar-age weaponry is highly problematic because of the Christian burial rite in the whole region—especially in the Eastern Mediterranean—which did not commonly incorporate weapons into burials (Kolias 1988, 30–35). Some burials with weapons are, however, known: four from Corinth (Davidson – Weinberg 1974; Ivison 1996, 117–119; Vida – Völling 2000, 32–34), and one from Pergamon (excavated in the summer of 2007 by Felix Pirson). The interpretation of these burials is continuously changing, but are mostly identified with the burial of Barbarian mercenaries (Ivison 1996, 117–119; Vida – Völling 2000, 32–34). As a result of these burial customs most of the weapons from the Byzantine Empire are known from settlement contexts (Gaitzsch 2005, 130–159). Unlike Anatolia and the Middle East, several burials with weapons are known from Italy, where the burial rite was partly similar to the ‘Barbarian territories’ due to the settlement of the Lombards in this area during the second half of the 6th century. Italy presents a different kind of problem: the distinction of the Germanic (Merovingian) and Byzantine weapons. In Hungary the study of weapons of Mediterranean origin was started by Attila Kiss (1987a, 193–210) with the identification as Byzantine of swords with crossguards cast of copper alloy, which is continued by Éva Garam (2001, 158–163) with the examination of artefacts of Byzantine origin from the Early and Middle Avar Period.
- 14 Comparative studies between Merovingian and Avar armament are far easier as a result of the huge quantity of weapon burials known from Central Europe. The research of the Merovingian swords (*spathae*) (Menghin 1983), axes (Hübener 1980), some spear types (Hübener 1972) and seaxes (Hübener 1988; Wernard 1998) is well developed. Comparative studies between Central Europe and the Carpathian Basin were quite evident for the earlier periods (5–6th centuries), when Transdanubia (the former Pannonia province) and the Great Hungarian Plain was populated by various Germanic tribes (Goths, Gepids, Lombards etc), but the Avar Age was not examined in this respect. The publication of the Környe cemetery first drew attention to significant Merovingian elements on an ‘Avar’ site (Salamon – Erdélyi 1971). The study of Merovingian contacts of Early Avar material culture was continued by Attila Kiss, based upon an ethnic interpretation of these remains, with the archaeological heritage of the Avar-age Germanic population identified as Gepids by mapping shield bosses (*umbo*), double-edged swords of Merovingian type (*spathae*) and socketed leaf-shaped (lenticular) arrowheads (Kiss 1979b, 185–191; Kiss 1987b, 203–278; Kiss 1992, 35–134; Kiss 1996; Kiss 2001; Kiss 1999/2000, 359–365). This Germanic influence has been addressed from a different perspective by Tivadar Vida, who studied costumes and deposition rules instead of single artefacts (Vida 2000, 161–175).
- 15 Archaeological traditions and burial customs provide favorable circumstances in the Eastern European steppes for the preservation of weapons. However, such a large area, local chronologies and poor accessibility to archaeological publications present particular problems in this field. Hungarian archaeology had deeply rooted traditions in the research of the Eastern influences from the Steppes on the material culture of the

is the formation and evolution of sabres and the analysis of their early forms.<sup>16</sup>

As well as typology, the study of associated assemblages and their context play a significant role in the study of these weapons.<sup>17</sup> Although several writers emphasize that the combination of weapons deposited in burials does not reflect directly original armament, some weapon types can allow us to infer fighting methods indirectly.<sup>18</sup> Such investigations are also closely linked to a social analysis of burials with weapons,<sup>19</sup> which leads to the study of other

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early medieval Carpathian Basin, which already started in the late 19th and early 20th century with the activity of Béla Pósta (1905), and was continued by Gyula László (1955) and Nándor Fettich (1926a, 1–14; Fettich 1937; Fettich 1951) between the two World Wars. Due to the political changes after World War II Hungary became part of the Eastern bloc, which partly facilitated institutional cooperation between the socialist countries and the Soviet Union, but which led to an overemphasis on the study of Slavic archaeology. Eastern influences on Avar archaeological heritage were addressed in two monographs in very different ways: István Erdélyi, as a pupil of M.I. Artamonov, a leading Soviet scholar of early medieval archaeology, was a representative of the 'traditionalist school' arguing that almost every element of 'Avar' material culture originated in the East (Inner Asia or Eastern Europe) (Erdélyi 1982), while Csanád Bálint, with his French education and wide-ranging interest from the Sassanians to Byzantium, drew attention to the local and Byzantine elements of Avar culture (Bálint 1989). Interpretations of Avar archaeology often cite Eastern analogies (mainly without context) for single artefacts, like reed-shaped spearheads (Kovrig 1955a, Kovrig 1955b), sabres (Garam 1979, Garam 1991a), lamellar armour (Bóna 1980, 31–95), ring-pommel swords (Mesterházy 1987, 219–245) and Early Avar swords in general (Simon 1991).

16 Three main approaches exist in the research of sabres: the Russian school focused on the form of the blade, mainly in its curvature (Merpert 1955; Pletneva 1973; Kyzlasov 2008, 75; Kochkarov 2008), the second emphasizing the false edge as the sabre's main attribute (Bálint 1992, 338–341; Bálint 1995a, 65–67), while the third mainly focussed upon its cross-guard (Garam 1991a, 157–160).

17 The study of weapon combinations was largely characteristic of German research, which tended to draw conclusions concerning social, legal status and armament based on statistical analyses (Werner 1968, 95–108; Steuer 1968, 18–87; Steuer 1970, 348–383; Hübener 1977, 510–527; Härke 1992; Siegmund 2000; Reiß 2007, 211–244). This quantitative method was used even in the early medieval archaeology of the Carpathian Basin by József Szentpéteri (1993, 165–246; Szentpéteri 1994, 231–306) and Jozef Zábojník (1995, 205–336).

18 For these methodological debates see the footnote No. 5.

19 Three main approaches exist for the social interpretation of burial assemblages: quantitative, qualitative and multilinear methods (Härke 1989; Härke 1992, 23). The quantitative approach seeks to conclude social differences from measurable aspects of artefacts, while the qualitative considers the social or behavioural aspects related to artefacts (see the 'quality groups' of Christlein 1973, 147–180). The multilinear approach emphasizes the

grave goods (like elements of costume, multi-part belt sets, jewellery, insignia)<sup>20</sup> and elements of burial rite (like horse sacrifice).

As well as other scientific methods, the application of anthropological results is increasingly important in archaeological research. The study of correspondence between deposition of artefacts and age groups of the deceased can provide significant new results for our understanding of burial rites and social status.<sup>21</sup> Besides the age groups, height, physique and traumatic injuries of the deceased<sup>22</sup> can be related to the deposition of weapons.<sup>23</sup>

The intention of this study is therefore to consider these two weapon types from a number of different perspectives, as a significant contribution to more complex interpretations of Avar-age society.

## 2 History of Research

Research on Avar-age weaponry has a considerable history, since already the first burials identified as Avar contained elements of armament. The history of

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importance of parallel study of various factors (including burial rite, age groups, quality and quantity of deposited artefacts) (Steuer 1982; Burzler 2000). Attempts at the reconstruction of social groups in Avar society have been mainly quantitative (Szentpéteri 1993, 165–246; Szentpéteri 1994, 231–306; Zábójník 1995, 205–336). However, a qualitative attempt was made for the social analysis of a Late Avar cemetery of Košice–Šebastovce (Csiky 2006, 111–124).

20 Some weapons can play the role of insignia or coronation symbols. Several examples are known from the Middle Ages for the use of swords or spears during coronation ceremonies: for the spear as insignia of early medieval Lombards and the Holy Lance, see Schramm 1955; Kirchwegger 2006; for the lance of the Árpáadian kings of Hungary: Kovács 2003, 261–289.

21 A specific question of the study of age groups in the context of weapon depositions is the interpretation of children's burials with weapons: toys or practising weapons (Ottinger 1974, 405–407) or apotropaic symbols (Schwab 1982, 260), while new approaches emphasize the social significance of these burials (Härke 1992, 192–195). As well as children's burials, the graves of adolescent and adult individuals have been analysed using this approach (Härke 1992, 192–195), and offer a good starting point for comparative studies on the social age of the deceased (see bridal costume of female deceased of a special age: Brather 2004b, 1–58; Brather 2007, 235–274; Brather 2008, 283–291).

22 Pathological analysis can detect traces of injuries caused by weapons, or mutation caused by usage of weapons.

23 Only such multi-factor studies can help us decide if these men buried with weapons were in fact warriors, or if this burial rite had only symbolic character which held particular social significance (Härke 1992).

research of these weapons has largely addressed their classification and typology, as well as ethnic identification and social interpretation. Here we will review general problems pertaining to the broader history of research of Avar arms and armour, whilst studies of detailed classification and typology will be discussed in the following chapter.

### 2.1 *Antiquarian Perspective and Cataloguing Artefacts*

The antiquarian approach was a characteristic feature of archaeological research in the Carpathian Basin (then part of the Austro-Hungarian Empire) until the 1870s, followed by more positivist surveys which optimistically focused on addressing a wider set of questions based on a greater abundance of quantitative data. This chapter deals not only with these 19th century surveys of artefacts but also with similar later studies, which also addressed aspects such as typology and society, as well as the history of technology.

The beginning of the systematic study of Avar-age weaponry is marked by the birth of Hungarian archaeology and its museum system:<sup>24</sup> the burial of Kunágota found in 1857 contained a close combat weapon, with gold sheet decorating the sword, although its full identification and reconstruction did not occur until almost 100 years later.<sup>25</sup> The first spearhead from a burial identified as 'Avar' was found between the 14th and 17th of August 1871 in Szentendre near the brick factory of Nagykürti.<sup>26</sup> Both of these burials played a significant role in the archaeological identification of the Avars by Ferenc Pulszky who dated them on the basis of Byzantine coins found in the graves.<sup>27</sup>

The following decades witnessed an abundance of activity by archaeological societies and the foundation of museums in the Austro-Hungarian Empire, which by the 1890s resulted in the discovery of a large number of Avar-age cemeteries containing several weapons.<sup>28</sup> A first synthesis of such 'Nomadic'

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24 The 19th century history of research of Avar finds has been discussed in detail by István Bóna (1982–83).

25 Ferenc Pulszky could not identify the original function of the gold sheets, since the iron components of the sword did not reach the Hungarian National Museum (Pulszky 1874, 1–12). Their function was determined by Gyula László using the sword from Kecel as a model in the 1930s (László 1938, 138–148), but its reconstruction was only published after World War II (László 1950, 31–33).

26 Bóna 1982–83. The site was identified by István Torma in 1981: MRT 7. 28/44.

27 Pulszky 1874, 1–12. The role of Ferenc Pulszky in the history of research of the Migration Period and the archaeology of early Hungarians was discussed by Péter Langó 2007, 78–83.

28 The archaeological societies played a significant role in the formation of the county museums (Maczó 2002), with most of the Avar-age cemeteries being excavated by these societies, led by some pre-eminent scholars of Szekszárd, Mór Wosinsky whose activity

(Avar and early Hungarian) weapons was made by Géza Nagy who summarised current understanding of Avar and early Hungarian weapons<sup>29</sup> as a reaction to the manual of weapons and their history by Wendelin Boeheim.<sup>30</sup> A significant monograph of three volumes on the archaeological heritage of the 'Migration period'<sup>31</sup> in the Carpathian Basin was written by József Hampel, which followed on from Géza Nagy in many respects, but in his classification and systematisation he was ahead of his time. Hampel's terminology still influences research on early medieval archaeology: he was the first who used the term 'reed-shaped' (*'schilfblattförmige'*) for Avar-age spearheads, as well as noting the importance of measuring the curvature of the blade on the sabres.<sup>32</sup>

The number of finds increased significantly after the great synthesis by Hampel in 1905, resulting in an important survey of Avar-age weapons by

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- in county Tolna—besides his famous Neolithic and Bronze Age excavations—resulted in the discovery of three Avar cemeteries (Cikó, Bonyhádvarasd and Regöly) (Bóna 1984b, 9–15; Gaál 2005). The leading archaeologists in Bács-Bodrog county (present day Vojvodina in Serbia) Lajos Roediger (1903a, Roediger 1903b, Roediger 1905) and Kálmán Gubitza (1907; Gubitza 1908; Gubitza 1909; Gubitza 1911; Gubitza 1914) were active participants of the Historical Society of Bács-Bodrog County (Bács-Bodrog Vármegyei Történeti Társulat). Elek Kada (1896, Kada 1906; Kada 1908) as the mayor and museum founder of the city undertook important excavations near Kecskemét (Kecskemét–Miklóstelep and Gátér). Ágost Sótér (1879–85; Sótér 1885; Sótér 1894; Sótér 1895; Sótér 1898a; Sótér 1898b) as the founder of the 'Historical and Archaeological Society of Moson County' (*'Moson megyei Történelmi és Régészeti Egylet'*) excavated Avar cemeteries in Csúny (Čúnovo, Slovakia) and Nemesvölgy (Edelstal, Austria). The archaeological investigation of the Migration Period and Early Middle Ages in Transylvania started with the activity of István Kovács, whose excavations in Marosvásárhely (Târgu Mureş, Romania) (Kovács 1915) and Mezőbánd (Band, Romania) (Kovács 1913) were important not only for Avar archaeology but also for Gothic (Sîntana de Mureş culture) and Gepidic remains in Transylvania.
- 29 Géza Nagy studied several aspects of medieval Hungarian weaponry published in three parts (hitting weapons: Nagy 1890, 115–124; defensive weapons: Nagy 1890, 402–416; stirrups: Nagy 1891, 115–124). He interpreted the Late Avar (8th–9th century) assemblages as 'Huns' according to contemporary chronological schemes (Nagy 1893, 313–315).
- 30 Wendelin Boeheim (1890) intended to write a general manual on weaponry from the earliest times until the end of the 18th century; however, he wrote very little on the weaponry of the steppes and on the weapons of Eastern origin in general.
- 31 In the Hungarian research tradition the Migration period lasted from the appearance of the Huns until the formation of the medieval Hungarian state (5th to the 11th centuries AD).
- 32 József Hampel listed only two dozen spears and eleven swords from the Avar Age (Hampel 1897, 42–55; Hampel 1905, I. 179–182). Despite such limited source material, his observations remain relevant.

Dezső Csallány, who was the first to discuss Early Avar period swords<sup>33</sup> and reed-shaped spearheads.<sup>34</sup> Dezső Csallány also undertook a general survey of Avar-age sites in the Carpathian Basin creating the first version of 'ADAM'.<sup>35</sup> After World War II, the work by Ilona Kovrig was pre-eminent and resulted in the formation of a tripartite chronology for the Avar Age.<sup>36</sup> Kovrig also amended Csallány's list of Early Avar spearheads and offered a very different interpretation of their origin and deposition.<sup>37</sup>

Following studies of different weapon types, Avar-age weaponry was studied by Attila Kiss in 1962 when he completed a list of all of the known Avar-age weapons, and classified them according to known typologies. He also offered an historical interpretation of the Avar-age burials with weapons as part of his unpublished research.<sup>38</sup>

More recently, a list of Avar-age burials with weapons was compiled by József Szentpéteri in his Candidate thesis on the social interpretation of Avar-age burials in 1990, in which he quantitatively studied weapons together with burials containing horses and multi-part belt sets.<sup>39</sup> His research resulted in the continuation of the work initiated by Dezső Csallány on the database of the Avar-age sites (ADAM).<sup>40</sup> On the basis of this significant research Szentpéteri wrote a series of topographical and cartographical articles.<sup>41</sup>

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- 33 Dezső Csallány (1939, 121–180) mentioned 32 swords from the Museum of Szeged in his paper, with its classification of Early Avar period swords remaining relevant for some time.
- 34 Csallány related his survey to an ethnic theory on Kutrigurs of Eastern European origin: he interpreted spearheads found together with stirrups as sacrificial 'pyres' (Csallány 1953, 133–137).
- 35 Csallány 1956.
- 36 Kovrig 1963.
- 37 Ilona Kovrig (1955a, Kovrig 1955b) interpreted these finds as artefacts of Inner Asian origin and regarded them as the evidence of the first generation of Avars settling in the Carpathian Basin.
- 38 Unfortunately the thesis of Attila Kiss (1962) remained unpublished. However, it had a considerable influence on Hungarian research. Access to this manuscript was gained thanks to the help of László Kovács, to whom I am deeply indebted.
- 39 Szentpéteri's thesis was written in 1990 but was not published until 1993–94, in two parts (Szentpéteri 1993, 186–189; Szentpéteri 1994, 231–306).
- 40 The cadaster of Avar sites or 'ADAM' has the same title as Csallány's work (Csallány 1956). Unfortunately this monumental work recorded Avar age sites only until the end of 1993. It is hoped that a renewed digital version will eventually become available.
- 41 Szentpéteri 1995, 239–254; Szentpéteri 1996, 151–165; Szentpéteri 2007, 457–497; Szentpéteri 2008, 325–346.



As a result of its geographical situation in the Carpathian Basin, Hungary played a leading role in the study of Avar archaeology, but important research was also conducted in neighbouring countries such as Slovakia,<sup>42</sup> Austria<sup>43</sup> and the former Yugoslavia.<sup>44</sup> A particularly significant survey of the northern periphery of the Avar Qaganate was undertaken by Jozef Zábójník, who like József Szentpéteri, had made a general survey of all burials with horses, weapons and ornamented belts from Avar-age cemeteries situated in Slovakia and Austria.<sup>45</sup>

Besides these general summaries, important studies have also been made of particular artefact types: ring-pommel swords<sup>46</sup> and Early Avar swords<sup>47</sup> by László Simon, double-edged swords of the Merovingian type (*spathae*), socketed arrowheads and shield bosses (*umbones*) by Attila Kiss.<sup>48</sup> Although the number of weapons found in burials has increased significantly, these surveys remain useful aids for anyone studying this period in the Carpathian Basin.

## 2.2 *Classification and Typology*

Significant developments have been made in the study of classification and typology of Avar-age weaponry. However, these results mostly refer to weapons from a single site and as a consequence of their different methods used are difficult to compare. The early medieval archaeology of the Carpathian Basin is characterised by terminological confusion with respect to the distinction between classification and typology: the term typology was used as a substitute for classification.<sup>49</sup> A characteristic feature of earlier studies was that weapons were primarily classified by their secondary attributes (suspension

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42 Zábójník 2004a.

43 Heinz Winter (1997) compiled the cadaster of Avar age sites in Upper-Austria (Oberösterreich).

44 Two similar works has been written in the former Yugoslavia: Dmitrijević – Kovačević – Vinski 1962; Mrkobrad 1980.

45 Zábójník 1995, 205–336.

46 László Simon (1983) tried to find analogies for the sword of Nagykőrös found in 1981 in his monograph.

47 The work by László Simon (1991) based on his candidate's thesis defended in 1986 on the Early Avar swords mentioned 192 edged weapons, which was a complete survey of this artefact type.

48 Attila Kiss (1992, 35–134) used this survey for the ethnic identification of the Gepidic population resettled by the Avars from the Great Hungarian Plain to Eastern Transdanubia.

49 The classification arranges the artefacts based on their formal attributes (*'Merkmal'* in German, *'признак'* in Russian), while the typology examines the links between the types and intends to show trends in their development.



loops, crossguards and decorations), while their primary (functional) attribute (the blade) was of secondary importance.<sup>50</sup>

This approach is clearly evident in the study of Early Avar period (c. 568–650) edged weapons which early research tended to distinguish types based on their suspension loops. Two types were distinguished: 1. swords with P-shaped suspension loops and 2. ring-pommel swords with triple-arched loops. This system remained unchallenged until the research work by László Simon, only the terminology changed: Nándor Fettich called the swords with P-shaped suspension loops the ‘Kul-Oba – Taman’ type’ and ring-pommel swords the ‘Kunágota – Tiszaújfalu type’,<sup>51</sup> while Dezső Csallány, influenced by the new finds near the city of Szeged, called the same types the ‘Kiszombor – Deszk’ and the ‘Csengele type’ after the sites of these artefacts. According to Csallány, these types have chronological significance, with the ‘Kiszombor – Deszk type’ being earlier,<sup>52</sup> whereas they were interpreted as differences of ethnic origin by István Bóna.<sup>53</sup> The Eurasian distribution of both suspension loop types was examined by Csanád Bálint, whose study revealed that this form of suspension was not only known from the steppes but they were also used in several early medieval settled civilisations.<sup>54</sup>

The crossguards played a similar role in research on sabres, evident in the second half of the Avar Age. This tradition followed the early classification of Nándor Fettich,<sup>55</sup> and was elaborated on by Éva Garam in her study of sabres

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50 The main reason for the emphasis on this method was that these decorative elements of weapons were subjects of quicker changes than functional elements, as a result of which they are more suitable for revealing chronological differences.

51 Fettich 1926a, 166–171; Fettich 1926b, 1–14. This classification is in principle the same as the traditional division into P-shaped suspension loops and triple-arched suspension loops which is usually held to be the invention of Dezső Csallány (1939, 139–140). This classification is still valid but only for the suspension of the swords.

52 According to Csallány the swords with P-shaped suspension loops (called by him Kiszombor – Deszk type) are dated to an earlier period than the ring-pommel swords with triple-arched loops (Csengele type) (Csallány 1939, 134–141).

53 István Bóna identified the ring-pommel swords as of Far Eastern or Inner Asian origin, while he considered the swords with P-shaped suspension loops as the Central Asian (Hephtalite) component of the Avar weaponry (Bóna 1980, 51–52; Bóna 1984, 310–311) after the work by Csanád Bálint (1978, 206). László Simon accepted this position on the basis of Bóna (Simon 1991, 273). These Inner and Central Asian components of the Avars will be discussed in the chapter on ethnic interpretation.

54 Csanád Bálint (1993, 269–270, Fundliste 8) completed the list with new pieces from Éva Garam (1990, 253–272) and A.K. Ambroz (1986b), but did not make any typological distinctions between suspension loops.

55 The term ‘star-shaped crossguard’ was first used by Nándor Fettich (1926).

from the site at 'Tizsakécske-Óböög'. Her main distinguishing criteria for the classification of crossguards was their form and manufacture, distinguishing 'Byzantine',<sup>56</sup> 'star-shaped' and 'late Saltovo types'. The blades and suspension loops of the sabres and single-edged swords were of secondary importance.<sup>57</sup>

This situation changed with the work by László Simon on the Early Avar edged weapons submitted in 1986,<sup>58</sup> in which he applied a totally new approach to classification of blade and crossguard—and their combination—which formed primary attributes for distinguishing five types.<sup>59</sup> Simon observed certain long-term trends in typological development: the increasing significance of single-edged swords, the decrease of blade width, and the evolution of sabres from single-edged swords.<sup>60</sup>

Simon's classification involves some methodological problems since it does not adhere to a system of hierarchical attributes which would imply that the blade and the crossguard cannot be examined on the same level. Moreover, Simon's system did not distinguish the ring-pommel swords, either double- or single-edged, which by their manufacture, decoration and distribution comprise a closed group. László Simon distinguished those edged weapons with the attributes of sabres as group 'v'; however, the curvature of the blade and the false edge are two distinct formal attributes which cannot be used together.

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- 56 The so-called 'Byzantine' crossguards were identified in the study by Attila Kiss (1987), the distinction based on the fabrication of the crossguards which were cast from copper alloy.
- 57 In her study Éva Garam (1991a, 157–160) used the drawings and notes of László Kovács and the observations of the hilt and suspension loops by Róbert Müller on the sabre of Gyenesdiás (Müller 1989, 141–164), too. In this paper Róbert Müller identified the original function of the square shaped fitting with heart-shaped leaves on the corners, formerly reconstructed on the belt by Gyula Fülöp (1987; Fülöp 1988, 151–190). Due to the observations of Müller it is now clear that these items decorated the suspension loops of the sabres.
- 58 László Simon started studying the Early Avar swords after the discovery of gold foils decorating a sword scabbard in Nagykőrös in the year 1981. He analysed the ring-pommel swords ornamented with gold or silver foil in his monograph on the same sword (Simon 1983).
- 59 Group I (single-edged swords without crossguard); Group II (single-edged swords with crossguard); Group III (double-edged swords without crossguard); Group IV (double-edged swords with crossguard); Group IV (swords with a false-edge or curved blade, the so-called 'proto-sabre') (Simon 1991, 269–270).
- 60 This model is based on an evolutionary approach, and assumed a single-line of development (Simon 1991, 284–285). The swords are one of the best studied artefacts among the Avar-age material culture, with similar analysis not yet undertaken on any other artefact.

Simon's observations on the appearance of sabre attributes during the Early Avar period led to significant changes in research on the origin of sabres.<sup>61</sup> Formerly these artefacts were regarded as a result of a new wave of migration by the Onogur-Bulgars around 670 AD from Eastern Europe,<sup>62</sup> whereas Simon's studies revealed that all attributes of the sabre were already known in the Carpathian Basin in the first half of the 7th century. However, his identification of the false edge on Early Avar blades was not an entirely new discovery, since it was already evident with the publication of the sword of Tarnaméra in 1965,<sup>63</sup> but László Simon was the first to put such data into an historical scheme for these weapons,<sup>64</sup> while Csanád Bálint examined the problem in a wider, Eurasian context.<sup>65</sup>

During the first half of the 1990s a new approach emerged as part of the study of early medieval archaeology in Hungary due to the research of Csanád Bálint. These new results were partly based on Bálint's study of the burial of Üch Tepe from Azerbaijan and its Sassanian and Byzantine contacts. A single-edged sword with false edge was found in this grave, which was interpreted by Bálint as a 'protosabre' since he regarded the false edge, rather than the curvature of the blade, as the main attribute of sabres. The appearance of a 'protosabre' in this burial was of great chronological significance since Bálint dated it back to the 6th century by use of coins of Justinian origin found in the burial,<sup>66</sup> although this dating is not widely accepted.<sup>67</sup> Following this early chronology, this edged weapon would be the first one equipped with such a false edge in the world. In a search for analogies Bálint observed similar false edges on several Early Avar blades,<sup>68</sup> noting that this important attribute was

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61 Simon 1991; Simon 1993a, 171–192.

62 István Bóna (1970) regarded the appearance of the sabres as an evidence for the Onogur-Bulgarian migration around 670–75, and he refuted their existence in the Early Avar Carpathian Basin.

63 János Győző Szabó described the false edge and the crossguard cast of copper alloy on the single-edged sword of burial No. x (10) from Tarnaméra – Urak dűlő cemetery. He was already aware of the significance of his observations, but did not draw further conclusions from it (Szabó 1965, 29–71).

64 Simon 1991, 285; Simon 1993a, 171–192.

65 Bálint 1992, 338–343; Bálint 1995a, 64–73.

66 Bálint 1992, 338–343; Bálint 1995a, 64–73. The early dating of this burial is not generally accepted.

67 Attila Kiss (1997, 261–265) and Alex Komar (2006, 118) dated the burial to the 7th century.

68 Csanád Bálint (1992, 338–343; Bálint 1995a, 65–67) listed single-edged swords from Martynovka, Sivashovka, Malaja Pereshchepina, Corinth, Keszthely and Tarnaméra from Hungary, as sword blades with a false edge, however, no blade is known from the

used long before the assumed date for the first appearance of the sabres (670), and its distribution was not limited to the Steppes but is also well known from 7th century Byzantium, Iran and China.<sup>69</sup>

A similar approach was used in the case of polearms where the major concern of classification was the ‘quality’<sup>70</sup> and decoration<sup>71</sup> of the artefacts, while the distinction of major blade types, like reed-shaped and broad lenticular blades<sup>72</sup> was considered sufficient distinction. The first systematic classification of spearheads was completed in the monograph of the Pókaszeptek cemetery in which they classified these artefacts into four groups based on the shape of the blade, then within these groups they distinguished subgroups by using the proportion of the blade and the socket. This classification was a huge step towards combination types based on parallel examination of several attributes.<sup>73</sup> As for the Late Avar period (8th–9th centuries), spearheads were classified into six types based on the form of blade in the publication of Tiszafüred cemetery by Éva Garam.<sup>74</sup>

Significant new results in the research of Avar-age polearms were achieved by a young Slovakian scholar, Martin Husár, whose unpublished Master’s thesis studied such artefacts from Slovakia: besides a formal classification of depositional rules, the material of shafts and contemporary representations of the polearms were also considered.<sup>75</sup>

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Martynovka hoard (only the silver coverings and suspension loops were deposited in the hoard), and the sword blade from Corinth was unambiguously double-edged according to its publication (Davidson – Weinberg 1974, 516).

69 Bálint 1995a, 67.

70 Some scholars used the term ‘good quality’ incorrectly for good preservation without having any metallographical analysis.

71 In the case of spearheads the decoration is composed of grid-patterned rings and connecting chap. This approach is used by Ilona Kovrig (1955a; Kovrig 1955b) in her studies on the Avar conquest of the Carpathian basin, where she used the ‘good quality’ of the spearheads as attribute, but it was still used by Uta von Freeden (1991).

72 Hampel 1897; Hampel 1905.

73 Sós – Salamon 1995, 69–73. This system is not entirely coherent since the type ‘tv’ does not fit to either criteria.

74 The author distinguished four types: 1. narrow blades with rhomboid cross section, 2. feather-shaped, 3. reed-shaped, 4. ‘composed of a narrowing socket’, 5. short feather-shaped and 6. small ‘reed-shaped’ spearheads (Garam 1995, 349–350).

75 The scheme of Martin Husár is particularly complex, and in some cases its complicated codes are difficult to understand (Husár 2005). In his articles the author studied winged spears of the Carpathian Basin (Husár 2006, 47–78) and the representations of Avar-age polearms (Husár 2007, 29–41). His monograph on polearms in early medieval Carpathian Basin was published recently in Slovakian (Husár 2014).

### 2.3 *Ethnic Interpretations and Questions of Origin*

The study of early medieval archaeology in Central and Eastern Europe is fundamentally oriented towards ethnic questions, largely as a result of a nationalist–romantic historical approach rooted in 19th century European thought.<sup>76</sup> The claim for identification of various ethnic groups by means of archaeological practice was already a significant part of the beginnings of ‘Avar archaeology’ as defined by Ferenc Pulszky.<sup>77</sup> Subsequently this approach focussed not on the identification of ‘Avars’ themselves but on minor ethnic groups of various origin living in the ‘Avar Qaganate’ according to written sources such as Gepids, Kutrigurs, Onogurs and Slavs. This approach used burial customs, multi-part belt sets and armament as distinguishing attributes. In what follows, only the ethnic theories related to weaponry and burials with weapons will be discussed.

The identification of the Kutrigurs, regarded as the Eastern European component of the Avars, was attempted by using a particular burial or sacrifice custom in which a special spearhead type played a significant role. The so-called ‘pyre theory’ was constructed by Dezső Csallány using the complex of Bácsújfalu as evidence. Supposed funeral pyres served for the identification of Kutrigurs among the Early Avar population: according to this theory the Kutrigurs burnt the horse, harness and weapons of the deceased and deposited the remains in a separate pit near the burial. Csallány linked reed-shaped spearheads decorated with grid-patterned rings to this ethnic group and listed them in his study of the Kutrigurs.<sup>78</sup>

While Csallány identified ‘funeral pyres’ with the Eastern European component (Kutrigurs) of the Avars, Ilona Kovrig provided a fundamentally different interpretation of the same phenomenon, arguing that iron artefacts found in these complexes were of good ‘quality’ because they were manufactured in Inner Asia.<sup>79</sup> Following Kovrig’s arguments István Bóna interpreted these complexes as ‘sacrifices’ known from Inner Asian Turkic sites as ‘*тайник*’ (cache), while he explained the good preservation of stirrups and lances as a product of secondary burning.<sup>80</sup> These ‘funeral sacrifices’ were later studied together

76 The best summaries of the problem: Brather 2000, 141–149; Brather 2004a.

77 Ferenc Pulszky (1874) identified the archaeological heritage of the Avars by means of coin-dated burials, but he was the first who identified the early Hungarian archaeological material, too (Pulszky 1891). On his role in Hungarian archaeology: Langó 2007, 79–83.

78 Csallány 1953, 133–137.

79 Kovrig 1955a, 30–44.

80 Bóna 1971a, 240 (24); Bóna 1980, 47–48.

with burials containing horses, as a result of several stray finds containing spearheads and stirrups being interpreted as the product of similar practices, despite knowing little about their archaeological context.<sup>81</sup>

The cremation rite of the Bácsújfalú complex was refuted by Péter Tomka who drew attention to the fact that no unambiguous traces of burning can be observed on any of the artefacts coming from the supposed 'pyre', while its archaeological context is also obscure since it was not excavated by professional archaeologists.<sup>82</sup> As a consequence, we refer to this complex as a 'sacrifice', with artefact combinations characteristic for burials of horses, but not a pyre or cremation, drawing attention to the absence of evidence for burning, calcinated bones or ash in these shallow pits. However, it is important to note that the combination of artefacts found in such complexes is identical with horse burials, therefore they may be regarded as 'symbolic horse burials'.<sup>83</sup>

István Bóna played a decisive role in research on the 'Migration Period' in Hungary, as reflected in the study of Avar-age weaponry. His historical approach is characterised by an emphasis upon ethnic questions related to two major problems: the origin of the Avars, and the immigration of the Onogurs during the Middle Avar period (around 670 AD).

Bóna's ethnic theory on the origin of the Avars was influenced by the historical theory of Károly Czeglédy based on the 'pseudo-Avar story' of Theophylact Simmocatta, according to whom 'Avar' is only a pseudonym, and the original name of the Avars is 'Uar' and 'Khunni'.<sup>84</sup> In spite of the controversial nature of this narrative source Károly Czeglédy used it as a key source for Avar ethnogenesis assuming that the Avars were composed of two ethnic groups: the 'Uars' (or 'Vars' identified with the Ruanruans of the Chinese sources) of Inner Asian<sup>85</sup> origin and the 'Khunni' (Hephtalites) of Central Asian<sup>86</sup> descent.<sup>87</sup> This

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81 The study of Early Avar period burials with horses by Némethi – Klima (1992, 176–177) still used the term 'pyre', listing 51 such complexes, while András Liska (1995, 93–96) already called them offerings.

82 The stirrup—horsebit—spearhead combination are called offerings by Péter Tomka (2008, 250–252).

83 These finds are characterised by a combination of stirrup, horse bit and spearhead.

84 Dobrovits 2006, 176–183.

85 Inner Asia is the central part of Eurasian steppes including Kazakhstan, Mongolia, Tuva and Minusinsk Basin, which is identical with the Russian concept of 'Центральная Азия'.

86 Central Asia is the southwestern part of Inner Asia including Khorezm, Khorasan and Transoxiana which are mainly characterised by oasis civilisations and a settled lifestyle. This geographical term is identical with the Russian concept of 'Средняя Азия'.

87 Czeglédy 1983, 25–126; Pohl 2002, 34–35.

historical theory had a significant impact on Avar archaeology: István Bóna tried to identify these two ethnic components of the Avars using archaeological methods, including a consideration of the history of weapons. Bóna regarded 'sacrificial finds' containing reed-shaped spearheads<sup>88</sup> and ring-pommel swords<sup>89</sup> as attributes of the Inner Asian group, while swords with P-shaped suspension loops and sword hilts decorated with ring-pendants as attributes of the Central Asian (Hephtalite) group.<sup>90</sup> The popularity of Bóna's theory is marked by the fact that its specific elements are still used as arguments in Avar archaeology.

Such immigration theories were always popular in Hungarian research on early medieval history and archaeology as an explanation for cultural and technological change. The beginning of the Middle Avar period marked considerable transformation in material culture, interpreted as a consequence of the migration of the 'Onogur Bulgars'. This theory was already used in 19th century Hungarian scholarship,<sup>91</sup> but István Bóna constructed a coherent system based on archaeological, numismatic and historical<sup>92</sup> arguments regarding the 'immigration in the Middle Avar period'. According to his view, during the last third of the 7th century (around 670 based on numismatic and historical sources) a new ethnic group (Onogur Bulgars) settled in the Carpathian Basin causing significant changes in the material culture of the Avar Qaganate, a basic element of which was the sudden appearance of the sabre.<sup>93</sup> The idea of Onogur migration fundamentally affected research on the Avar Age for decades due to the professional authority and educational activities of István Bóna.

The idea of Onogur migration was eventually severely criticised by Csanád Bálint, drawing attention to contradictions in the theory.<sup>94</sup> The critique

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88 Bóna 1971a, 240 (24); Bóna 1980, 47–48; Bóna 1984a, 310.

89 Bóna was influenced by a comparative study by Joachim Werner (1988) and a monograph written by Akio Ito (1971) on the Korean antiquities of the Silla Period (Bóna 1980, 51).

90 István Bóna (1980, 52) mainly used the Central Asian Sogdian wall paintings of Afrasiab and Penjikent for distinguishing this group.

91 The idea of the Onogur immigration around 670 was already proposed by Géza Nagy Géza in the volume 'The History of Hungarian Nation' ('Magyar nemzet története') written for the millenium of the Hungarian conquest of the Carpathian Basin (Nagy 1895, CCCXLVIII–CCCXLIX).

92 Bóna was influenced by the theory of Samu Szádeczky-Kardoss on the immigration of Kuber, son of Kuvrat (ruler of Great Bulgaria) (Szádeczky-Kardoss 1968, 84–87).

93 István Bóna (1970) modified his theory several times (Bóna 1982–83; Bóna 1984a, 325–327; Bóna 2000a, 28).

94 Bálint 2004b, 35–65; Bálint 2008, 29–61.



generated considerable scholarly debate,<sup>95</sup> and even leading to an international conference on several aspects of the so-called ‘Middle Avar Period’.<sup>96</sup>

Significant advances have been made in research on the Germanic population of the Early Avar period. Merovingian elements in Early Avar material culture, including weaponry, were first observed in the cemetery of Környe which was originally dated to the first half of the 6th century (before the arrival of the Avars at 567/568), interpreted as the burial ground of a military garrison of mixed ethnicity (Germanic and Kutrigur) related to the nearby Late Roman fort.<sup>97</sup> Both this ethnic interpretation<sup>98</sup> and the dating of the site<sup>99</sup> became the subject of an international debate.

The Avar-age continuity of the Gepids is mentioned in written sources,<sup>100</sup> and is also visible archaeologically in several ‘Gepid’ cemeteries which were continuously used in Transylvania well after 567–568, when the Carpathian Basin became part of the Avar Qaganate.<sup>101</sup> The studies of Attila Kiss, however, transformed this idea of Gepid continuity, since he localised it in a new area: Transdanubia. He began with studying the archaeological heritage of various Germanic ethnic groups (Goths, Lombards, Scirii) of Eastern Transdanubia (former Roman province of Pannonia), and later excavated a remarkable Early Avar site which contained significant Merovingian elements (two cemeteries and a settlement) at Kölked–Feketekapu.<sup>102</sup>

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95 For a reaction to Csanád Bálint’s review and of his numismatic arguments: Somogyi 2005, 189–228; Somogyi 2008, 347–393.

96 New comments on the chronology of the Period from Eastern Europe (Gavritukhin 2008, 63–126), from Merovingian archaeology (Martin 2008, 143–174), coin-dated burials (Zábojník 2008, 301–306) and the changes of the structure of ornamented belts (Szóke 2008a, 175–214), on burial rite (Tomka 2008, 233–264), on the changes in Keszthely culture (Kiss 2008, 265–278), on the main cemetery of the period (Gyenesdiás) (Müller 2008, 279–300).

97 Salamon – Erdélyi 1971, 70–71.

98 The ethnic question was primarily emphasised by Kurt Horedt (1971, 200–208; Horedt 1985, 164–168).

99 A general summary of the so-called Környe-debate and its affect on the history of research: Tomka 1973, 227–231. The contemporary comments (Bóna 1971b, 300; Bott 1976, 201–280; Ambroz 1973, 289–294; Martin 1973, 110–112) emphasised the chronological problems.

100 These sources were discussed by Attila Kiss (1992, 36–38).

101 Continuous Gepidic cemeteries from Transylvania: Kovács 1913; Kovács 1915; Bóna 1978, 123–170; Bóna 1986a, 162–164; Horedt 1985, 164–168; Harhoiu 2001, 110–120; Bârzau – Harhoiu 2008, 513–578.

102 Attila Kiss was a specialist of the Migration Period and Merovingian archaeology in the Carpathian Basin. He started his academic career at the Janus Pannonius Museum in Pécs where he had several opportunities for studying artefacts of Merovingian origin from the



Based on his broad knowledge of Merovingian archaeology, Kiss constructed a theory concerning the mass continuity of the Gepids, whereby they were deported from the Great Hungarian Plain to the western shore of the Danube during the second half of the 6th century. He used the spatial distribution of particular artefacts (double-edged swords of Merovingian origin (*spathae*), shield bosses, socketed arrowheads, wheel-turned stamped pottery, bone combs, crescent-shaped hair-rings) known from both the 'Gepid Period' (455–567) of the Great Hungarian Plain and the Early Avar period (568–650) of Eastern Pannonia to make direct ethnic identifications.<sup>103</sup> However, Kiss also examined artefact types of western Merovingian origin, with some types dating only to the second half of the 6th century, weakening his arguments on continuity.

Despite this direct ethnic identification being severely criticised,<sup>104</sup> Kiss' research on artefacts of Merovingian origin in the Early Avar period has inspired further research on this topic.<sup>105</sup> The study of western contacts of the Early Avar period has become more sophisticated in its methods: with the study of particular artefacts of western origin being complemented by an analysis of burial rites and reconstructions of costume;<sup>106</sup> the study by Tivadar Vida of the *spatha* belts and *spatha* suspension is a good example of this new approach.<sup>107</sup> Research on Merovingian elements in Avar archaeological heritage is still a popular topic, and while the continuity of the Transdanubian population still awaits verification, the Gepid continuity in the Eastern part of the Carpathian Basin along the Tisza river is shown by more evidence: in one 'Gepid male' burial from Tiszaroff (near Szolnok) a gold *solidus* of emperor Maurice came

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- Early Avar Period. The excavation of the Kölked cemetery (1970–1993) directly turned his attention to ethnic questions of the Avar-age Germanic population (Kiss 1979b, 185–191).
- 103 The studies of Attila Kiss on the Transdanubian continuity of the Gepids: Kiss 1987b, 203–278; Kiss 1992, 35–134; Kiss 1999/2000, 359–365; Kiss 1996; Kiss 2001.
- 104 Csanád Bálint (1995a, 309–310) criticised the methods of Attila Kiss using distribution maps from two different periods for direct ethnical interpretation.
- 105 New methodological basis for the research of Avar-age Germanic population: Vida 1999a; Vida 1999b, 563–574; Vida 1999/2000, 367–377; Vida 2000, 161–165; Vida 2004b, 435–442.
- 106 Tivadar Vida used mainly classification and distribution in studying the Early Avar Period pottery, arguing for the continuity of Germanic and Romanised populations in Pannonia (Vida 1999a). Later he used reconstructions of garments: women's belt pendant (Vida 1996, 107–112; Vida 1999/2000, 367–377), amulet-capsulae (Vida 1995, 221–295), hair-pins (Vida 1999b, 563–574), Christian items (Vida 2002, 179–209; Vida 2004a, 435–442) and simple artefacts of Byzantine origin used by the Romanised population (Vida 2009, 233–259).
- 107 Vida 2000, 161–175.

to light<sup>108</sup> suggesting that the chronology of several burials formerly dated to the first half of the 6th century should be reconsidered.

Research on Byzantine influences on the Avar archaeological culture is not of ethnic character; however, its study is crucial for the understanding of the foreign relations of the Avars, and has attracted particular attention from the beginning, although it became the focus of international archaeology only more recently. During the first half of the 1990s a considerable change occurred as a consequence of the approach of Csanád Bálint and Falko Daim, who both emphasised the Byzantine roots of several phenomena in Avar material culture. The attention of Csanád Bálint turned to this Byzantine element during the analysis of the burial from Űch Tepe (Azerbaijan) which shed new light on several elements of the Early Avar material culture including the origin of the ornamented belt<sup>109</sup> and sabre.<sup>110</sup>

Similarly, Falko Daim also turned his attention towards the Byzantine roots of the Avar culture,<sup>111</sup> as a consequence of his three-column model (1. shape, decoration, motives, style, 2. manufacturing techniques, 3. material). In his study he focused on the Byzantine influence on the multi-part belt sets of Late Avar period (8th–9th centuries),<sup>112</sup> later he put the Avar material culture into a broader European context.<sup>113</sup> Following him, Jozef Zábajník studied Late Avar belt sets of Byzantine origin from Slovakia.<sup>114</sup>

Éva Garam begun studying artefacts of Byzantine origin from Avar burials during the 1980s,<sup>115</sup> and she summarised these studies in a monograph which is the first comprehensive synthesis of Byzantine influences on Avar material culture.<sup>116</sup> The aforementioned studies inspired further research on Mediterranean contacts of the early medieval Carpathian Basin.

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108 [http://www.mnm.hu/Upload/doc/mnm\\_sajtoanyag\\_tisaroff.pdf](http://www.mnm.hu/Upload/doc/mnm_sajtoanyag_tisaroff.pdf).

109 On the supposed Byzantine origin of the multi-part belt sets: Bálint 1992, 411–415; Bálint 1995a, 203–221; Bálint 2000, 99–163.

110 Bálint 1992, 338–343; Bálint 1995a, 64–73.

111 Falko Daim first studied the origin of the griffon motive popular during the 8th century (Daim 1990, 273–304).

112 Daim 2000, 77–204.

113 Daim 2003, 463–570.

114 Zábajník 2000, 327–365.

115 Éva Garam studied the brooch of Dunapataj (Garam 1989, 137–153), the pectoral jewelry costume of Byzantine origin (Garam 1991d, 151–179), the disc-brooches characteristic to the local Roman population of Keszthely culture (Garam 1993b, 99–134) and the Byzantine belt sets (Garam 1999/2000, 379–391).

116 Garam 2001.

The research on Byzantine influences on Avar weaponry, however, started well before the aforementioned new approach. Attila Kiss—also known for his research on Gepid continuity—distinguished a group of Avar swords of Byzantine origin from this period.<sup>117</sup> His starting point was a double-edged sword with crossguard cast of copper alloy from an Early Byzantine burial at Corinth.<sup>118</sup> He used this object as parallel for similar double-edged swords with copper alloy crossguards from the 7th–10th century Carpathian Basin.<sup>119</sup>

Following the identification of these Byzantine swords, attempts were made to also identify spearheads of Byzantine origin in Avar weaponry. Reed-shaped spearheads with connecting chap of good preservation, which were usually regarded as a result of Avar influences, were also found in south Germany and Italy.<sup>120</sup> Uta von Freeden criticised this interpretation: according to her opinion the Avars were not technically proficient to produce weapons of such good quality, and as a consequence these artefacts would be of Byzantine origin.<sup>121</sup> This theory was later reexamined by Mechtild Schulze-Dörlamm together with early Merovingian stirrups. She emphasised the role of Italy in the transmission of stirrups between Byzantium and the Merovingian Europe, while from the combination of stirrups and lances she also drew conclusions about important tactical changes occurring during that time.<sup>122</sup>

Important methodological studies have been written relating to the ethnic interpretation of early medieval archaeology, one of the best examples of which is the monograph of Sebastian Brather who is fundamentally sceptical about the identification of ethnic groups based on archaeological studies. Although his book became controversial both in Germany and Hungary,<sup>123</sup> it inspired new approaches in the field of Avar archaeology.<sup>124</sup>

The research on the origin of particular artefact types also includes some methodological problems discussed by Csanád Bálint, who drew attention to a special feature known as ‘Orient-preference’ which prevails in both Hungarian

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117 Kiss 1987a, 193–210.

118 Davidson – Weinberg 1974, 516.

119 Kiss 1987a, 193–210. Although according to Éva Garam the double-edged blade is not an attribute of Byzantine origin (Garam 2001, 158).

120 Koch 1968, 89–91.

121 von Freeden 1991, 621–623. The main problem of this theory is that grid-patterned rings (characteristic of the Carpathian Basin) do not appear on reed-shaped spearheads from south Germany and Italy as listed by Uta von Freeden, while the grooves on the blade, which are mainly known from Italy, are not characteristic of Avar age spearheads, suggesting that these artefacts cannot be linked to a common workshop.

122 Schulze – Dörlamm 2006, 485–507.

123 Bierbrauer 2004, 45–84; Vida 2006.

124 Bálint 2005, 37–56; Bálint 2006b, 277–347.

and Bulgarian archaeology, overemphasizing Eastern analogies and regarding them as the earliest and original. This simplistic method led to the misinterpretation of distribution maps as evidence for migrations, leading many to disregard other possibilities (gift, trade, exchange or loot).<sup>125</sup>

Whilst such ethnic interpretations of various archaeological phenomena have been a characteristic feature of Avar archaeology since its beginnings, my intention is to avoid direct ethnic questions, most of which cannot be answered by archaeological methods. In what follows, the term 'Avar' will be used as the name of an archaeological culture and not in an ethnic sense.

#### 2.4 *Social Reconstruction*

Interest in social reconstructions grew after World War II, influenced by the Marxist historical-philosophical school prevalent in the socialist countries behind the Iron Curtain. However, social questions in Hungarian archaeology were not only studied by Marxist authors since the ethnographically oriented school of Gyula László also played a significant role in early medieval studies.

The approach of Gyula László inspired by ethnography and sociology is rooted in the traditions of the 1930s in attempting to reconstruct ancient society in all its complexity by using archaeological data.<sup>126</sup> Due to his artistic talent and education László drew several reconstructions of ancient artefacts and costumes, among them the ring-pommel sword of Kunágota with its gold fittings<sup>127</sup> and the ornamented double belt from Bócsa,<sup>128</sup> both of which became very popular as a result of the exhibitions of the Hungarian National Museum. The ideas and theories of László deeply influenced Hungarian society through his popular books.

The views of Gyula László on Avar society were published in 1955 in French and as a result received little attention in Hungarian research, although the manuscript and Hungarian translation are widely cited.<sup>129</sup> The starting point of László's study was the analysis of the cemeteries of Kiskőrös–Vágóhíd and

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125 Bálint 2004a, 246–252; Bálint 2007, 545–562.

126 This approach is already evident in the volume *A honfoglaló magyar nép élete* ('The Life of Conquering Hungarian Folk') (László 1944).

127 The reconstruction of the Kunágota sword was possible only after 1935 (the finding of the swords of Kecel and Bócsa). Apart from the reconstruction, Gyula László studied the gold fittings of the Kunágota sword too, which were originally decorations from a Byzantine box (László 1938, 55–86). The reconstruction of the Kunágota sword was only published after World War II (László 1950, 31–33).

128 László 1955, 225, fig. 61.

129 Most Hungarian archaeologists only cited the book's Hungarian manuscript (a chapter of it was even published in Hungarian in 1977 (László 1976). The monograph was begun in the 1940s and completed by 1951 but only published in 1955 (László 1955).

Kiskőrös–Városalatt, however, he mainly focused on the ‘princely burial’ of Bócsa. The reconstruction of the double belt of this burial was not only of aesthetic significance, but became an important source for social theories: according to his view the individual in the Bócsa burial originally wore a belt decorated with silver discs of lower quality, until the time of his appointment as a ‘prince’ by the Qagan when he would have acquired a new belt decorated with pseudo-buckles together with a suspended quiver, a rhyton and a goblet.<sup>130</sup> The supposed function of the sword with golden fittings was described in the case of the Kecel burial: ‘*Le <<sabre d’or>> [sic] symbolise un régime puissant organisé d’en haut par la violence.*’ According to the description, the prince did not wear the sword covered with gold sheets as a result of his descent from a clan or tribe, but he gained it from the Qagan in the form of an investiture gift as an insignia (symbol of power).<sup>131</sup> The ‘golden sword’ became the symbol of the violence and power and the centralizing attempts of the Qagan’s authority.

The double belt which comprised the basis of Gyula László’s theory was recently re-assessed by Béla Miklós Szóke who reconstructed the disc-shaped mounts of the belt decorated with pseudo-buckles,<sup>132</sup> although these have not been generally accepted.<sup>133</sup> It is important to note that the archaeological context of the Bócsa find is unknown, and the lack of documentation means that there is a lack of information on the belt set, and as a consequence all attempts at reconstruction are hypothetical and speculative.<sup>134</sup> In the social theories of Gyula László the substitution of fantasy for argument was compensated by his personality, his fascination with style, and a considerable talent for synthesis based on artistic intuition.<sup>135</sup> As a result his work is still indispensable for social studies of Avars, although most of his social reconstructions are no longer accepted.

What remains the richest burial of the Avar Age was excavated in Bábonypuszta near the village Kunszentmiklós in 1971, and immediately interpreted as a princely or Qagan’s burial. The author of the publication, Elvira H.

130 The author regarded the number of arrowheads (25 pieces) as a sign of the deceased’s princely rank (László 1955, 231–232; in Hungarian: László 1976, 104–106).

131 László 1955, 235.

132 Szóke 2008a, 178–182.

133 Gergely Szenthe disputed the reconstruction of Szóke on the basis of various Iranian and Central Asian representations (Szenthe 2009, 385–390).

134 After recovery of these artefacts a small excavation was undertaken by Nándor Fettich in 1935, but his excavation diary (the only available documentation) was lost during World War II, thus László’s only source was oral informations by the excavator (László 1955, 219).

135 Early reviews: Fettich 1947, 285–287; Banner 1957, 487–488.

Tóth, was deeply influenced by László's work, and therefore tried to reconstruct the biography of the deceased based on the artefacts found in the burial. She assumed the 'prince' or 'Qagan' of Kunbábony originally wore the belt ornamented with silver mounts, the sword and the rhyton, and he only later received the belt decorated by pseudo-buckles with garnet inlays as a sign of his rank of Qagan. According to Elvira H. Tóth, the burial should be regarded a Qagan's grave, as no richer Avar-age grave is known.<sup>136</sup> This reconstructed biography paraphrased the idea of Gyula László on the Bócsa burial. The interpretation of the Kunbábony burial played a decisive role in the identification of the Malaja Pereshchepina find with the burial of Kuvrat, ruler of Great Bulgaria by Joachim Werner.<sup>137</sup> Ironically, this argument was then used at the time of its final publication to establish that the Kunbábony burial was also a qagan's grave by comparison with the Pereshchepina find!<sup>138</sup> Even those opposed to the identification of the Kunbábony burial as a Qagan's grave compared its 'richness' with Malaja Pereshchepina as an argument against its rank,<sup>139</sup> representing one of the best examples of a vicious circle.

A modern approach is represented by the work by József Csalog who introduced the term 'ostentatious weapon' for some Early Avar swords decorated with silver fittings. Some of these swords are equipped with a ring-pendant on their hilt, which according to Csalog would hinder its use as weapon.<sup>140</sup> He did not write explicitly about the social function of these swords (as status symbol, prestige goods or sign of power) but he nonetheless drew tentative conclusions from its decoration and function.<sup>141</sup>

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136 H. Tóth 1972a, 167.

137 Joachim Werner got acquainted with the Kunbábony burial from its preliminary reports and he cited it often during the identification of the Pereshchepina find with the burial of Kuvrat (Werner 1984a). According to new Ukrainian research the assemblage is not a burial but a memorial complex of a Khazar aristocrat (Komar 2006, 243–244).

138 H. Tóth – Horváth 1992, 217–219.

139 Bálint 1995b, 77; Kiss 1995, 131–149.

140 Csalog 1959, 105–108. The ring pendant does not hinder the usage of the sword, since it can fasten the wrist strap as István Bóna (1980, 48–51) supposed. In certain cases the small rings on the sword could have symbolic meaning, like in the case of 'ring-swords' where the rings placed on the pommels of *spathae* could be status symbols or signs of affiliation to a particular war band (Evison 1976, 303–315; Steuer 1987, 206–215).

141 The term 'ostentatious weapon' ('Prunkwaffe' in German) is widespread in German archaeological literature where even the most richly furnished burials are called 'ostentatious graves' avoiding a social interpretation. See Kossack 1974, 3–33.

László's social interest was inherited by his former students such as József Szentpéteri, who studied various aspects of Avar social history. The methods of Gyula László were applied in his study of the cemetery of Želovce (Slovakia), in which Szentpéteri distinguished three zones and interpreted them as centre, right and left wing, using military terminology.<sup>142</sup> Three 'social' groups were identified from the cemetery based on artefact combinations: the ornamented belt and weapons were regarded as signs of free men (based on this assumption, the proportion of free men and their dependants had a ratio of 1:2). He identified the richest burial of the central group with the burial of a kinship leader, and those of the wing leaders heading extended families.<sup>143</sup> He followed Gyula László's preconceptions rigidly without querying their theoretical basis. However, this study had some forward-looking features: it was the first to use age groups of the deceased and the results of anthropological investigations for social analysis.<sup>144</sup> This study applied the social model created by Gyula László in the 1940s without changes, rendering it anachronistic at the time of its publication.

Following this first attempt József Szentpéteri wrote his Candidate thesis on the social interpretation of Avar-age weapon burials using similar methods for the whole Carpathian Basin. He compiled a huge database of burials with weapons, ornamented belts and horses which were used to analyse combinations using quantitative statistical methods. On the basis of his detailed charts he tried to model a social pyramid using the hypothetical gold – silver – copper alloy order and combinations of weapons, belts and horses.<sup>145</sup>

Slovakian scholarship was at the forefront of research on Late Avar burials with weapons. Jozef Zábajník studied those weapons of western origin from Avar-age burials.<sup>146</sup> Later he analysed the social structure of the Northern periphery of the Avar Qaganate with analyses of horizontal stratigraphy of cemeteries, and applying his chronology based on the seriation of Late Avar belt sets.<sup>147</sup> Zábajník mainly used quantitative statistical methods for analysing

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142 Szentpéteri's system (1985, 82) is identical with László's analysis on the cemeteries of Győr–Téglavető and Csúny (Bratislava–Čunovo). This method was originally used in the examination of Early Hungarian cemeteries. (László 1944; for its use in Avar Age: László 1955, 53–85; 125–130).

143 Szentpéteri 1985, 89.

144 Szentpéteri 1986, 148–149. According to his observation, hair-clips (used by male individuals) only occurred in burials of elder men.

145 Szentpéteri 1993, 186–189.

146 Zábajník 1978, 193–214. The study of Frauke Stein (1968, 233–242) on Avar – Merovingian contact had a great impact on his work.

147 Zábajník 1991, 219–321.



burials with weapons, ornamented belts and horses, studying their distribution and chronology.<sup>148</sup>

The concept of ‘ostentatious graves’ in Avar archaeology was elaborated on by Csanád Bálint who drew attention to the spontaneity of nomadic societies and the significance of the exceptions in his social analysis.<sup>149</sup>

Much international (mainly Merovingian) research also studied the social relations of weaponry, but it had little or no impact on Avar archaeology. In what follows, my intention is to present some of the main approaches which can be applied to the Avar archaeological heritage.

The first summary on the Merovingian weapon burial rite was written by Joachim Werner, who had already made some social-historical assumptions based on weapon combinations found in burials.<sup>150</sup> Parallel to Werner, a significant development occurred in the methodology of social studies in archaeology, such as that of Heiko Steuer who questioned the validity of using legal categories for weapon burials containing various weapon combinations and emphasised that the analysis of archaeological sources should not be influenced by written sources much later than the studied cemeteries. The relation between armament and society or armament and fighting methods was the major topic of this research. He drew attention to the fact that the deposition of weapons in burials is not a result of the legal but rather the social status of the deceased.<sup>151</sup> During his research on the relationship of armament and warfare he made the observation that the strategies of fighting in groups or duels alternated in the history of early medieval wars.<sup>152</sup>

The studies of Wolfgang Hübener drew attention to the analysis of individual weapon types and their functions showing that similar weapons can be used in very different ways (such as the hitting and throwing function of axes).<sup>153</sup>

A special distortion factor in the study of weapon combinations is demonstrated by wooden weapons, as studied by Torsten Capelle, showing the importance of taphonomical loss.<sup>154</sup> However, this is not the sole cause of the

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148 The study shows significant changes in time and space in the costume of ornamented belts and weapon depositions in burials (Zábojník 1995, 205–336).

149 According to his view the ornamented belt and weapon deposition does not mean automatically infer the elite position of the deceased (Bálint 2006a, 147–150).

150 Werner 1968, 95–108.

151 Steuer 1968, 18–87.

152 Steuer 1970, 348–383.

153 Hübener 1977, 510–527.

154 The notion of taphonomical loss was first used by Gyula László for the absence of bows from some weapon burials (László 1944, 37).



absence of weapons made from organic materials in depositions,<sup>155</sup> as some inorganic elements of armament can be absent either as a result of burial rite, grave robbery or the social status of the deceased.

The study of Anglo-Saxon weapon burials by Heinrich Härke reformed the Continental approach combining English and American anthropological methods with his Continental (German) archaeological education that traditionally focussed on typochronology and cemetery analyses. He compared weapon combinations found in burials with physical anthropological features (like age, physique, disease and injuries) of the deceased in order to reveal the real nature of weapon deposition in graves.<sup>156</sup> In conclusion, Härke also emphasised the symbolic nature and ideological power of weapon depositions in burials.<sup>157</sup>

A different approach examined the social aspects of the location of burials: great cemetery, church [*Kirchengrab*] or separate small cemetery [*Separatfriedhof*] for distinguishing elite burials, showing a process of the formation of nobility (noblemen) in medieval Germany.<sup>158</sup> The relationship of the weapons and belt-costume including its social role was also studied by Hubert Fehr.<sup>159</sup>

The above-mentioned works all serve as a methodological basis for research on the social aspects of weapon depositions in burials. It is important to emphasise that our knowledge of Avar social structure is very limited as a consequence of the scarcity of written sources, and therefore all such examinations can only provide new information on the funerals of elite individuals and not on their role in life as it must have been within society.

### 3 Methods Applied in this Study

#### 3.1 *Terminology and the Methods of Classification*

A standardised terminology and method is crucial for further examination of Avar-age close-combat weapons. My intention is therefore to suggest a solution to the chaotic phrasing and misphrasing of weapons and their parts in Avar archaeology and to present the specific methods and attributes of my classification as they have been applied.

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155 Capelle 1982, 265–288.

156 Härke 1992.

157 Härke 1997, 119–127.

158 Burzler 2000.

159 Fehr 1999, 105–111.

Weapons can be classified as offensive and defensive by their function, and close and distant-combat weapons by the reach of their use. Both of the examined weapon types in the present work are offensive close-combat weapons.<sup>160</sup> Polearms or pole weapons are close-combat weapons composed of a long wooden shaft and a sharp metal head attached to it, while edged weapons, known also as cutting or blade weapons, consist of a long metal (mainly steel) blade suitable for both cutting and thrusting. Battle axes are not examined as part of the present study since their short cutting edge is supplemented by a hitting surface, resulting in a functional difference, and as a consequence of which these artefacts are termed 'hitting weapons'.

### 3.1.1 Terminology of Polearms

Several different terms are used for describing polearms in English, such as 'spear', 'lance', 'pike', 'javelin', 'jereed' and 'halberd'. Only single pointed polearms are known from Avar-age burials of the Carpathian Basin, and are generally referred to as spears in Avar archaeology but 'pike' is also a frequently used term.<sup>161</sup> However, the latter is not a general term, such as to describe Avar-age polearms used by mounted warriors, since pikes were originally used only by infantrymen, while polearms of cavalry are generally referred to as 'lance'.<sup>162</sup>

Avar polearms are mainly found in burial contexts (with the exception of some sacrifices) and therefore very little is known about their original function. However, most of the terms for describing them are related to the weapon's function. As a result several terms (like pike and lance) will be omitted, and only the term 'spear' will be used for polearms in a very general sense without regard of their use by mounted warriors or infantrymen, with only throwing weapons being distinguished as 'javelins'.

These polearms are composed of two parts: a wooden shaft and a spearhead made of steel, which is divided into blade<sup>163</sup> and socket.<sup>164</sup> The main function of the blade is to injure the foe, while the socket fixes the spearhead to the shaft, therefore the blade should be suitable for frontal attacks which

160 Although some of the 'spearheads' can be identified as throwing weapons (javelins), their form is identical with other polearms.

161 Serious problems are caused by mistranslations of weapon types. The lances (polearms of a mounted warrior) are often translated as javelins ('*Wurfspeer*' in the German text, see Salamon – Erdélyi 1971, 56–57), which are throwing weapons or pikes which are weapons of footmen (Cs. Sós – Salamon 1995, 67).

162 The use of the term 'pike' in Avar archaeology is probably a result of mistranslations.

163 In German '*Blatt*', in Russian '*непо*'.

164 In German '*Tülle*', in Russian '*тулька*'.

determines its basic shape. Between the blade and the socket there is a narrow section of the spearhead of circular, oval or polygonal cross section called the neck which in some cases is decorated by ribs, grid-patterned rings or a nodus. Some blade types are angular near the neck, this part being the shoulder, while in some other cases a connecting chap with hexagonal or octagonal cross section is formed on the lower part of the blade.<sup>165</sup>

The spearhead was fixed to the wooden shaft by a socket which was manufactured from a trapezoid steel sheet termed the socket-wing, which was bent to conical shape and its edges bent next to or on top of each other. The socket can be opened or closed, the socket-wings bounded by a clasp, bent next to each other, bent or hammered on to each other. The socket of a spearhead can be decorated by facetting or a grid-patterned ring. Metric data of spears are composed of its length, blade length, blade width, blade thickness, neck diameter, the socket length, the largest outer and inner diameters and the socket depth (fig. 1).

### 3.1.2 The Terminology of Edged Weapons

Several terms are used for edged weapons in English, like 'sword', 'sabre', 'scimitar', 'dagger', 'seax' and 'falchion'. The straight blade of the sword is either single or double-edged, and therefore every edged weapon with a straight blade is described as a 'sword'. In the Eastern European archaeological literature (mainly in Slavonic languages: Russian and Slovakian) the term '*palash*' is used for single-edged swords, a term which is omitted in the present study.<sup>166</sup>

One of the most important questions of the Avar edged weapons' terminology is the distinction between single-edged swords and sabres. There is no unambiguous definition of the sabre: various attributes are regarded as criteria like the curved blade, the false edge or the curved hilt. Most researchers term all those edged weapons with a curved blade as a sabre,<sup>167</sup> while some others even use this term for swords with straight single-edged blade and false edge.<sup>168</sup> In what follows, the term 'sabre' will only be applied to curved bladed edged

165 This term was used as '*Zwischenfutter*' in German by Uta von Freeden (1991, 610).

166 The term 'palaš' is only used by Béla Miklós Szóke in Hungarian research on the Avar Age (Szóke 1992a, 93; Szóke 2002, 77, 80).

167 Most archaeologists agree on this criteria (Hampel 1905, 195–196; Garam 1991a, 152–155).

168 Gyula László was the first to coherently call the sword of Bócsa a 'sabre' (László 1955, 228–229, 232) probably as a consequence of the description of the Pershchepina sword as a 'straight sabre' ('*gerade Säbel*') by Joachim Werner (1984, 25).

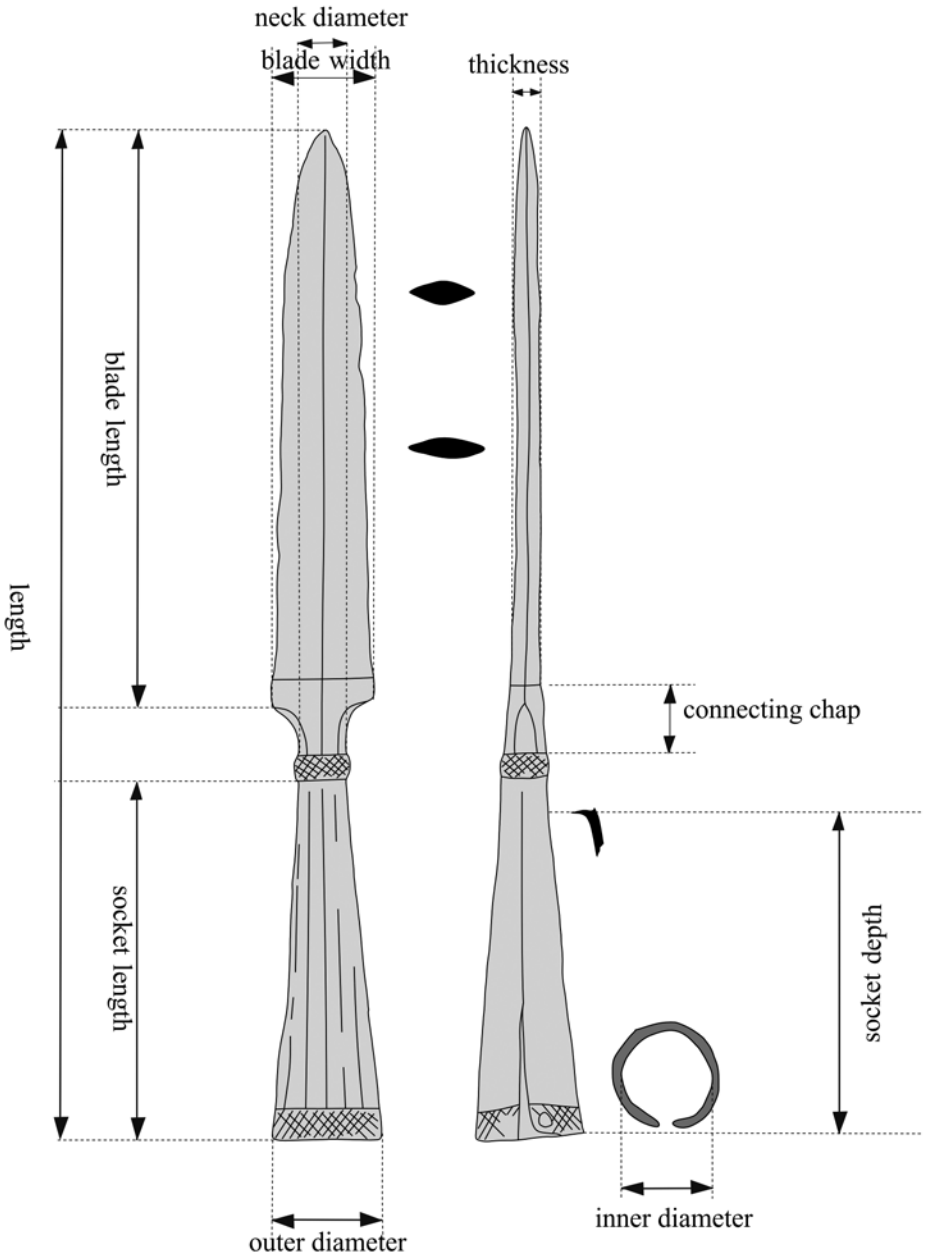


FIGURE 1 *Terminology of polearms.*

weapons,<sup>169</sup> while straight bladed examples with false edge are simply called single-edged swords. The term 'proto-sabre' is not used in the present study, since it does not refer to formal attributes but only suggests a transitional stage in the evolution of sabres.<sup>170</sup>

The term 'seax' is rather archaic in English, used only in the literature on the armaments of the Anglo-Saxons, and mainly used in the German archaeology of the Merovingian and Early Carolingian period as 'Sax',<sup>171</sup> the original meaning of which is a short single-edged sword. From early medieval written sources it is mainly known as 'scramasax' which is not common in the archaeological literature, where metrical terms are used for distinguishing short, narrow, broad and long seaxes ('Kurz sax', 'Schmalsax', 'Breitsax' and 'Langsax' in German literature). Terms borrowed from Merovingian archaeology will be used in the text for further distinctions.

Edged weapons are composed of two main parts: the blade and the hilt. The hilt is usually formed of a hilt-thorn (of quadrangular cross section) or a hilt-tongue (of flat, rectangular cross section) made of iron or steel, and its wooden covering of oval cross section generally riveted to the hilt-tongue.<sup>172</sup> In some cases its end was covered with a hilt cap in the form of a tube made of gold, silver or copper alloy sheets.

Edged weapons can be equipped with a crossguard cast of copper alloy or hammered out of steel placed between the hilt and the blade. The length of the crossguard does not usually exceed the blade width, therefore it could play little role in fencing.

The most important functional part of a sword is the blade, which can be straight, curved, single- or double-edged or in some cases equipped with false edge. The main parts of the blade are the blade stem, the back, the edge and the point. The blade stem is located near the hilt and was often covered by an iron sheet as a spacer for fixing the crossguard (fig. 2).

A groove or fuller running down the face of the blade was often used to lighten and provide greater solidity to the double-edged sword, the cross-section of which is normally lenticular, but in the case of blades with fuller its

169 The curving of the blade is the ratio between the segment height between the back of the blade and a straight line from the blade stem to the point and the segment length.

170 The term proto-sabre spread due to David Nicolle (1992, 304) who used it for single-edged swords with narrow blade, while Csanád Bálint described straight sword blades with false edge as sabres (Bálint 1992, 338–343; Bálint 1995a, 67–69).

171 For Anglo-Saxon seaxes: Gale 1989, 71–85.

172 The riveting of the wooden hilt was not characteristic of double-edged swords of western type (spathae).

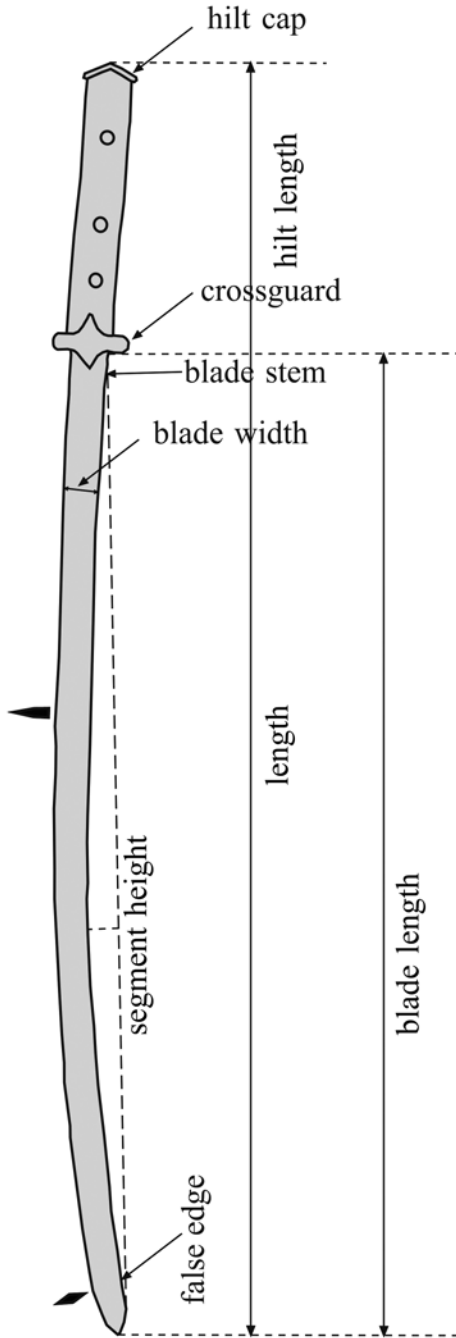


FIGURE 2 *Terminology of edged weapons.*

cross section is concave, while the cross section of single-edged blades is usually triangular or pentagonal. The false edge is a second edge on a single-edged sword toward the point and the lower third of the blade. Double-edged blades are usually symmetrical, while single-edged ones are asymmetrical.

The blade of the sword was protected by a scabbard usually made of wood covered with leather which was occasionally decorated with gold or silver sheets on three parts of it: the locket (below the crossguard), the chape (at the end of the scabbard) and at the suspension loops.

The scabbard was fixed to the belt by suspension loops connected to suspension straps, which is usually fixed by small buckles to the belt. The loops themselves are usually made of wood, but their surface and rim was often decorated with metal sheets.

### 3.1.3 Classification

Following the system of Manfred K.H. Eggert, any classification or typology must be clearly described and delineated: first is the process of classifying the artefacts by using certain attributes for creating types, while the second will demonstrate the direction of changes and the development between distinct types.<sup>173</sup> This definition of classification and typology also represents the order of their discussion, since first various groups, types, sub-types and variants must be distinguished, and their relations discussed only afterwards.

The classification of artefacts is necessarily a subjective process: it is performed by following specific rules, but it is based on attributes chosen by the researcher. The classification is a hierarchical structure examining several formal attributes that have been ranked as features from general to specific,<sup>174</sup> as a result of which combination types<sup>175</sup> can be distinguished which are based on joint examination of several attributes. Transitional types and exceptions were tried to be incorporated in the closest group according to their characteristic attributes.

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173 Eggert (2005, 122–133) based his approach on the methodological study of Rüdiger Vossen (1970, 29–79) which is the first systematic overview of the Anglo-Saxon classification method and its Continental reflection. On the methods of typology: Eggert 2005, 186–194; Klejn 1983, 1; Adams 2007.

174 Eggert 2005, 128–133.

175 This term means a type created by classifying several attributes. The best example for using this term is the work by Alfred Geibig (1991) on double-edged medieval swords, where he considered swords as a unit composed of blade, hilt, crossguard and scabbard, and created types using a combination of these attributes, with the pommel as a main attribute.

The blade, due to its functionality, is regarded as the main attribute both of polearms and edged weapons. These two weapon types are, however, fundamentally different from each other in their structure and therefore have been classified separately. The secondary attribute for polearms is the ratio between the blade and socket length followed by consideration of how the socket was manufactured. The edged weapons were classified differently: the secondary attribute is the existence of crossguard, while the decoration of scabbard or hilt is the attribute for distinguishing variants. The specific details of edged weapons (crossguard, scabbard, suspension loops) are classified separately.

The typological method is based on types created by a classification concerned with their development, and therefore is a useful device for establishing a relative chronology.

#### 3.1.4 Classification of Polearms

Polearms (P) are classified into four form-groups according to the shape of the blade: reed-shaped (P.I), conical (P.II), lenticular (P.III) and triangular (P.IV) (fig. 3).

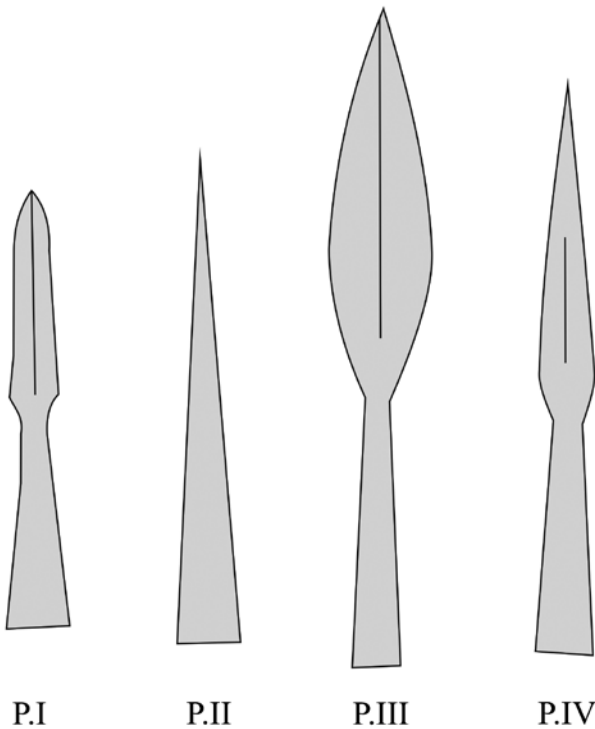


FIGURE 3 *Form-groups of polearms.*



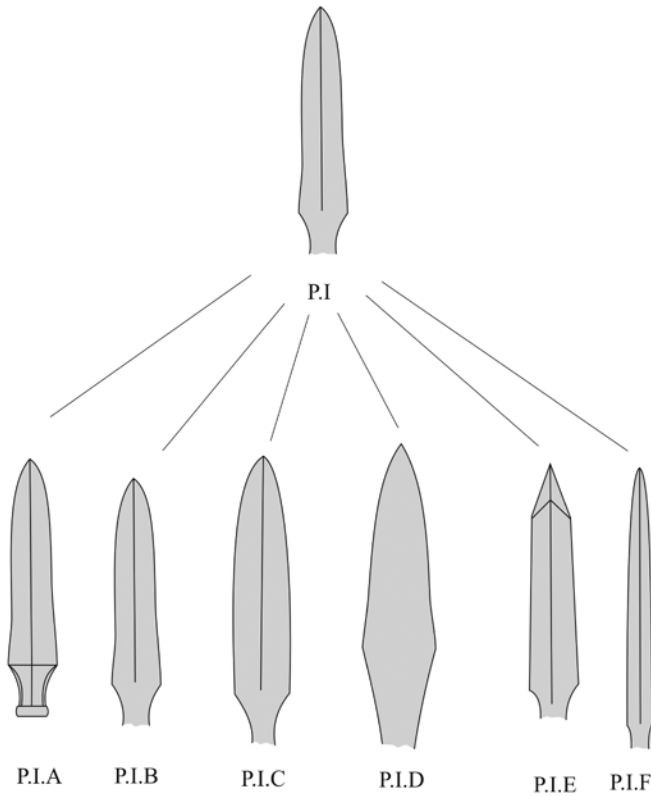


FIGURE 4 *Types of reed-shaped spearheads.*

The main characteristic of the reed-shaped blade (P.I) is its narrow shape, its edges are mostly curved and meet in a blunt angle at their point, the cross section of the blade being rhombic.<sup>176</sup> This form-group can be divided into several types:

P.I.A—reed-shaped blade with connecting chap

P.I.B—simple reed-shaped blade

P.I.C—broad reed-shaped blade with curved edges

P.I.D—reed-shaped blade with broad shoulders

P.I.E—pentagonal blade

P.I.F—narrow reed-shaped blade with quadrangular cross section (fig. 4).

<sup>176</sup> Several authors describe a rib in the case of reed-shaped spearheads. In fact it is the blunt edge created by the rhombic cross section of the blade, thus this term is only used in the present volume when the rib rose over the surface of the blade.

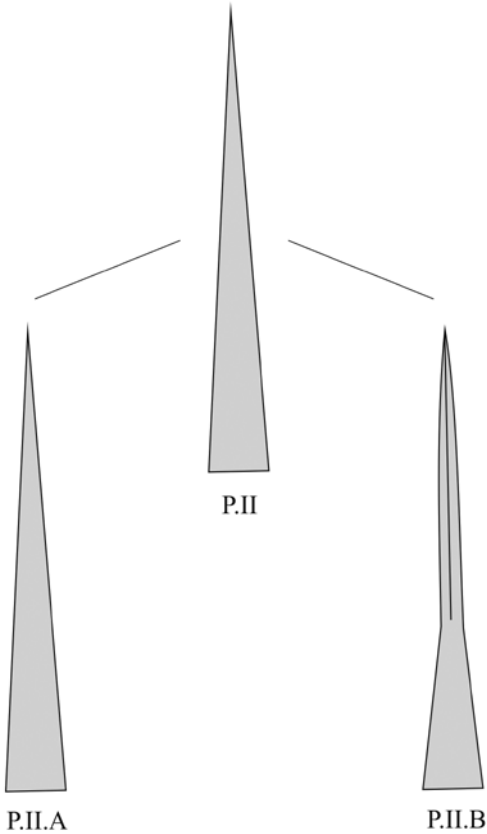


FIGURE 5 *Types of conical spearheads.*

In the case of the conical spearheads (P.II) the blade and the socket are not separate, the blade's cross section being circular or square-shaped. Two types are identified: conical (P.II.A) and narrow, needle-shaped (P.II.B) blades (fig. 5).

The blade of the lenticular<sup>177</sup> spearheads (P.III) does not have a shoulder, these pieces are oval in shape, their greatest width is normally toward the middle or in the lower third of the blade, the cross section of which is flat lenticular or rhombic. Several types can be distinguished based on the ratio of blade length and width or on the form of the cross section:

P.III.A—broad lenticular blade

P.III.B—narrow lenticular blade

<sup>177</sup> *Spitzovale* or *blattförmige* in German.

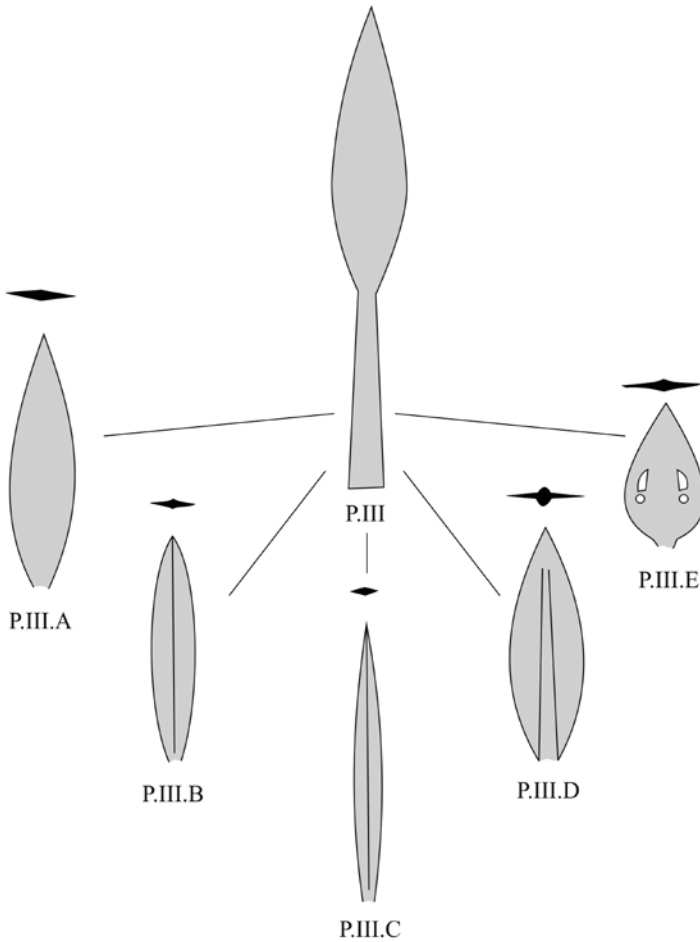


FIGURE 6 *Types of lenticular spearheads.*

P.III.C—narrow lenticular blade with rhombic cross section

P.III.D—lenticular blade with a central rib

P.III.E—lenticular blade with openwork decoration (fig. 6).

The edges of the triangular spearheads (P.IV) are straight, and the cross section is rhombic. Two types can be distinguished: P.IV.A: narrow and P.IV.B: broad triangular blade (fig. 7).

Sub-types were distinguished by the proportion of the blade and socket length: 1) with the blade being longer than the socket, 2) where the blade is shorter than the socket, and 3) where the blade and socket length are equal.

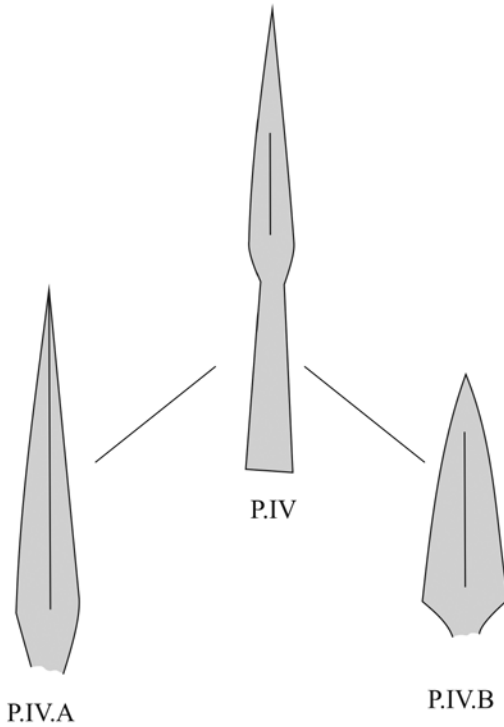


FIGURE 7 *Types of triangular spearheads.*

Finally, based on the manufacture of the socket six variants were identified: a) cleft socket, b) socket wings bounded by a clasp, c) socket wings abutting, d) socket wings bent on each other, e) closed socket, and f) a ring pulled over the socket (fig. 8).

These attributes are combined in alphanumeric codes composing types. The first letter of the code shows the category of the weapon (P for polearm), the second Latin number being the form of the blade, the following capital letter shows the type of the blade, then an Arabic letter presents the proportion of the blade and socket length, and finally a small letter symbolizes the manufacture of the socket.

### 3.1.5 Classification of Edged Weapons

An edged weapon can be regarded as a unit composed of a blade, hilt, cross-guard, scabbard and suspension loops. The various aspects of these edged weapons are classified separately and afterwards are combined into a single scheme. The main attribute is the blade, as a consequence of it being its

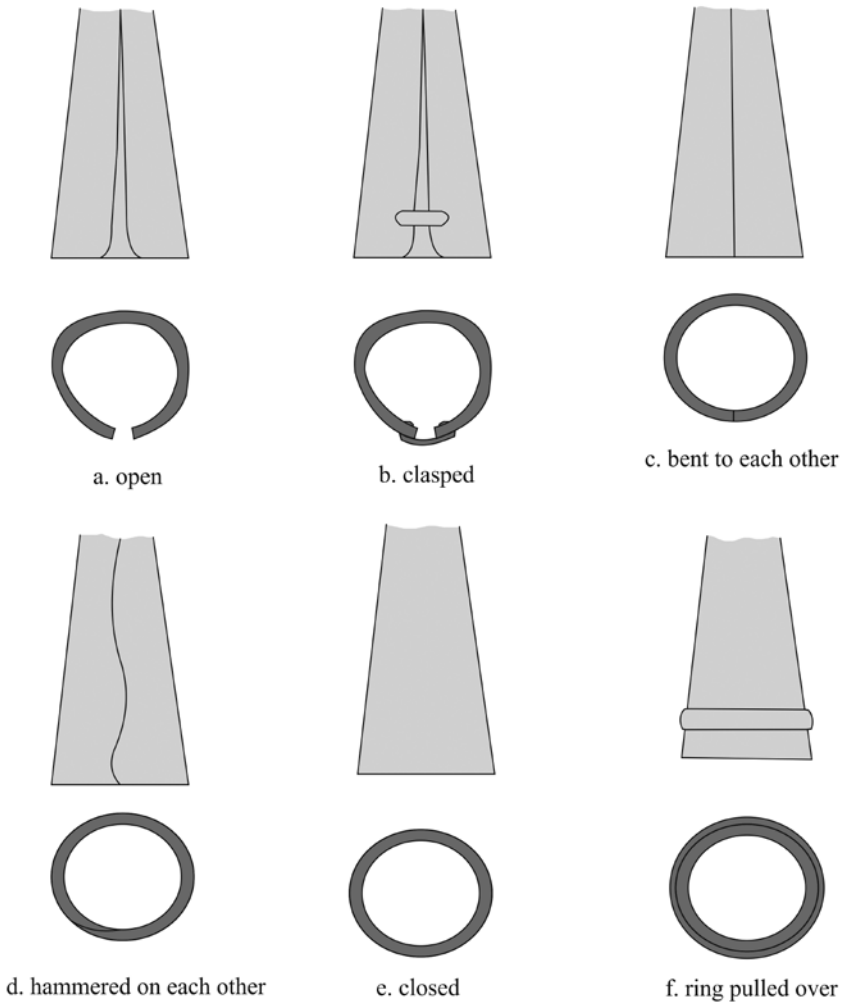


FIGURE 8 *Variants of sockets.*

main functional characteristic as a weapon, thus the edged weapons (E) are grouped into four form-groups based on the cross section and form of the blade: double-edged swords (E.I), single-edged swords (E.II), sabres (E.III) and seaxes (E.IV) (fig. 9).

In these form-groups types can be distinguished by the characteristics of the blade and the hilt (capital letters), the sub-types formed by using the presence or absence of the crossguard (1 or 2), and finally variants were distinguished based on the decoration of the scabbard (a or b).

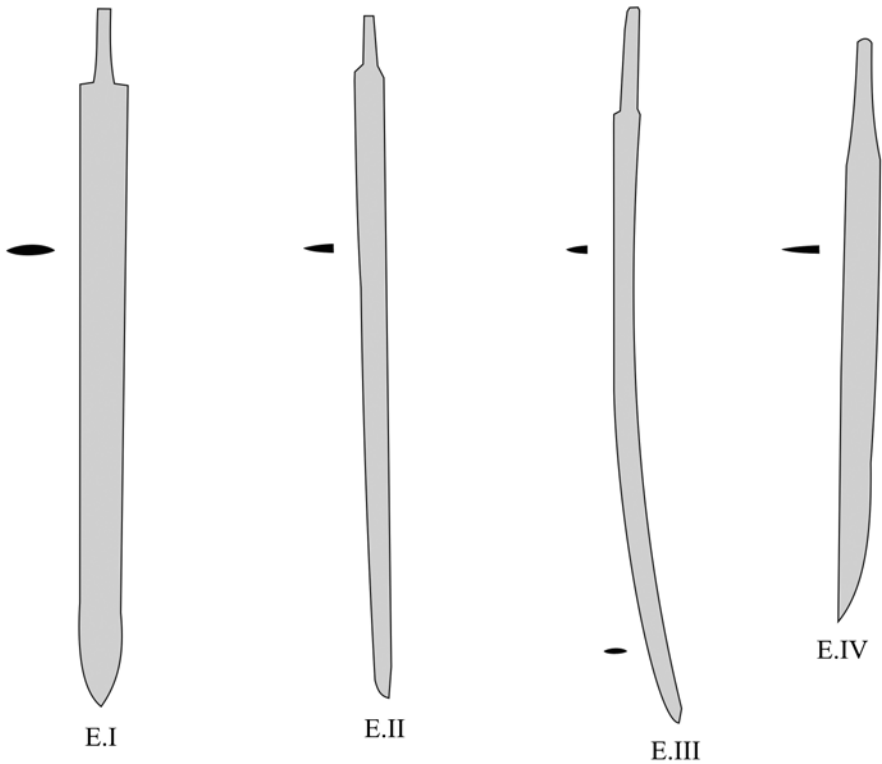


FIGURE 9 *Form groups of edged weapons.*

Double-edged swords can be divided into three types: wide double-edged blades with fuller (spatha blades) (E.I.A), narrow double-edged blades with lenticular cross section (E.I.B) and double-edged swords with ring-pommel (E.I.C) (fig. 10). The single-edged swords (E.II) can be divided into simple single-edged blades (E.II.A), single-edged blades with ring-pommel (E.II.B) and single-edged blades with false edge (formerly known as protosabres) (E.II.C) (fig. 11).<sup>178</sup> The sabre blades are classified based on their curvature, ranging from slightly curved (E.III.A), curved (E.III.B) to strongly curved (E.III.C) blade (fig. 12).<sup>179</sup> The German metrical system was used for the classification of the seaxes (short seax = *Kurzseax*: E.IV.A, narrow seax = *Schmalsax*: E.IV.B, broad seax = *Breitseax*: E.IV.C, long seax = *Langsax*: E.IV.D) (fig. 13).<sup>180</sup>

178 Figure 11 shows the types of single-edged blades (E.II).

179 Figure 12 shows the types of sabre blades.

180 Figure 13 shows the types of seaxes.

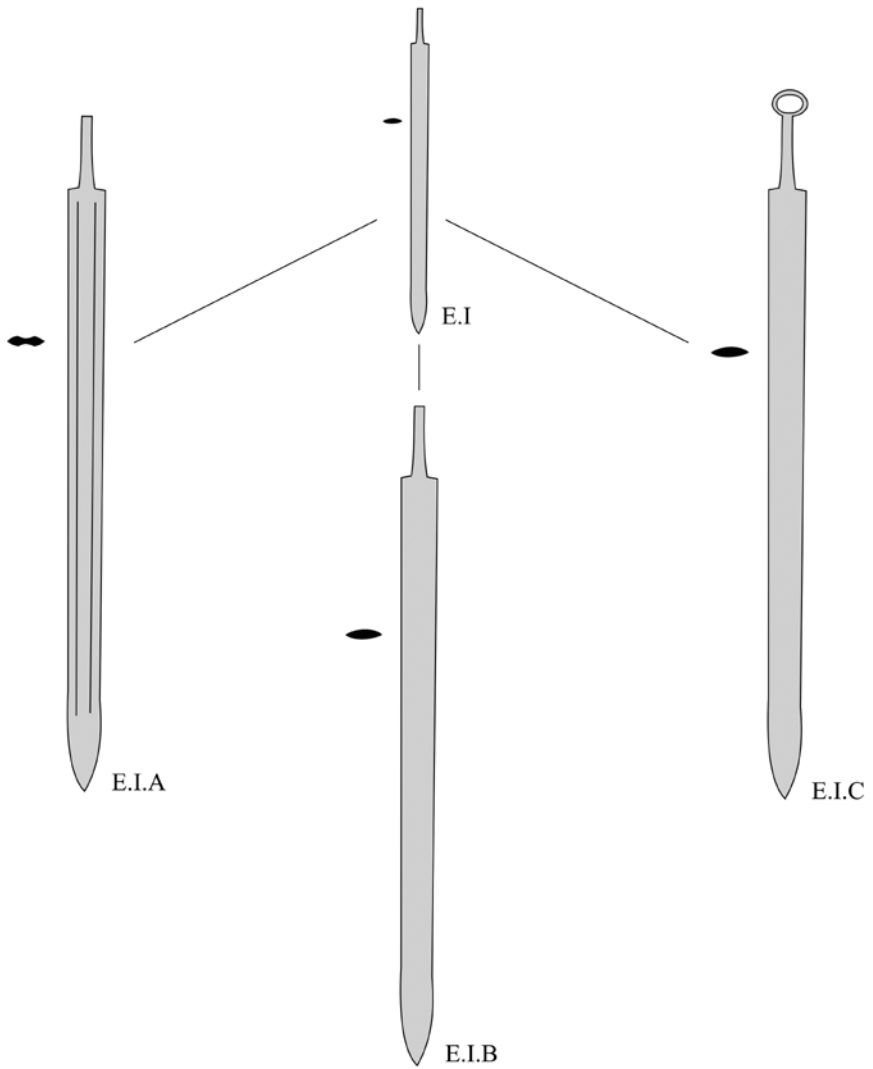


FIGURE 10 *Types of double-edged swords.*

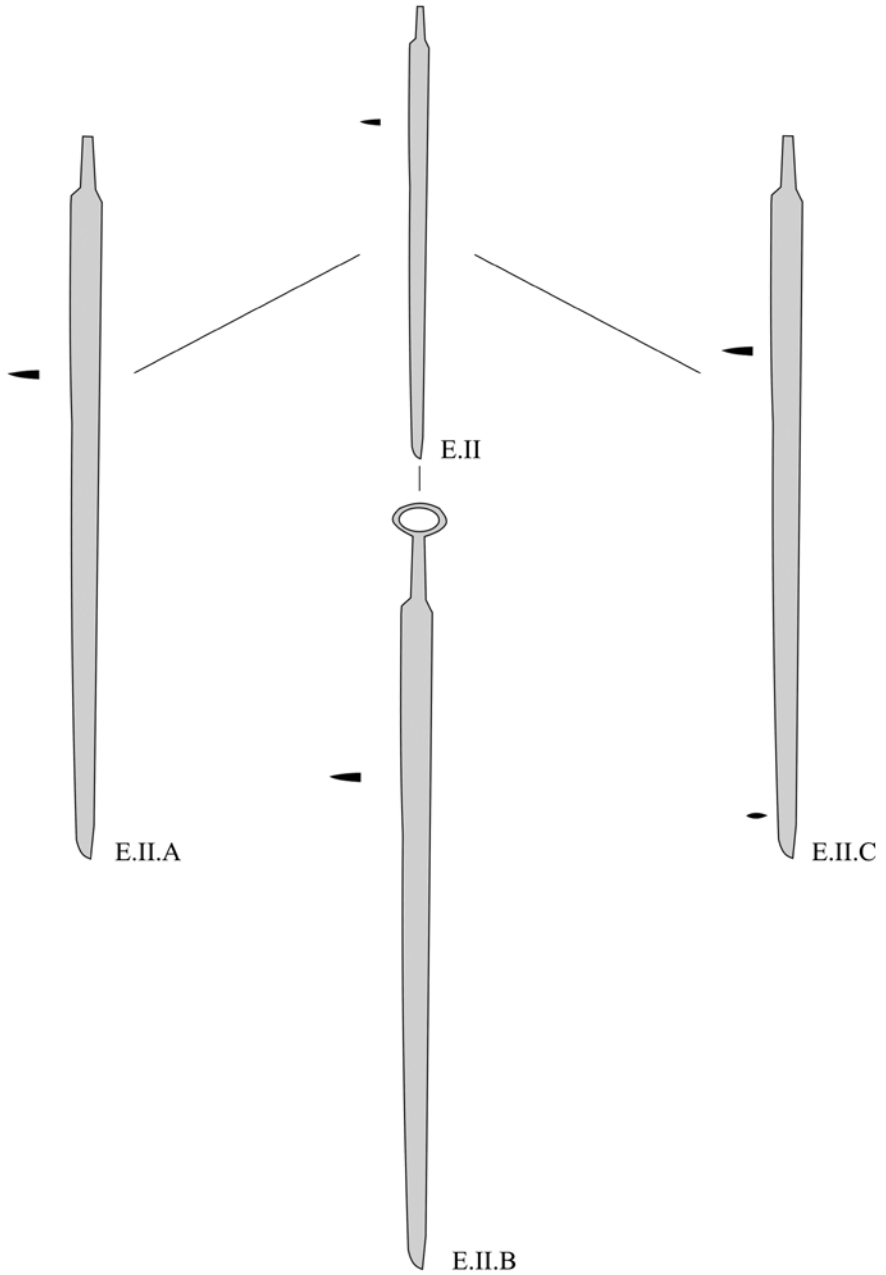


FIGURE 11 *Types of single-edged swords.*





FIGURE 12 *Types of sabres.*

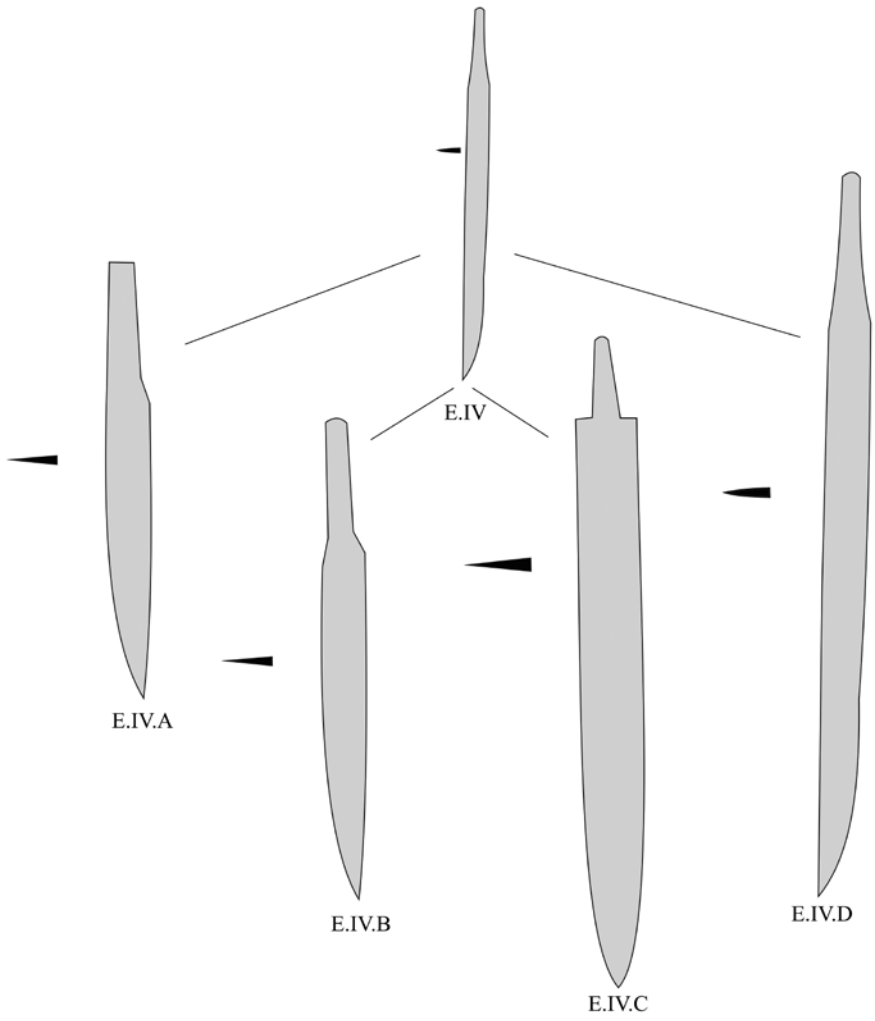


FIGURE 13 *Types of seaxes.*

Sub-types were created by the presence (1) or absence (2) of the crossguard. Some edged weapons of the Early Avar period can be divided on the basis of the metal sheets decorating the scabbard into ornamented (a) or non-ornamented (b) examples.

The various aspects of the edged weapons (decoration of the hilt, crossguard, suspension loop and decoration of scabbard) are classified separately. As a result of the classification, alphanumeric codes identify the type of the weapon composed of a first capital letter which denotes the category of weapon ('E' for edged weapon), followed by a second Latin number for the blade type, after that a capital letter for the sub-type of the blade, then an Arabic letter showing the existence of the crossguard, and finally a small letter present if the sword was ornamented or not.

In all classification of iron artefacts several exceptions and transitional types tend to occur, all of which were attempted to incorporate the above described system, as a result reed-shaped broad shouldered (P.I.D) polearms, javelins (P.V), single-edged swords with false edge (E.II.C) can be regarded as transitional types of small number of specimens, while a variant of broad seaxes ('Breitsax') only distributed around Komárno is a transition towards long seaxes.

### 3.2 *Technology*

All of the examined weapons were made of iron or steel, therefore the physical attributes of the iron and the process of manufacture are of crucial importance for the present work. Several methods are available for examining the physical features and manufacturing techniques of weapons, and their overview can make a significant contribution in evaluating early medieval weapons.

The iron (ferrum, Fe) is a metal of silvery colour, its atomic number is 29, it is placed in the 8th group of the Periodic table, its atomic weight is 55.85, its hardness is 3.5–4.3 by the Mohs-scale,<sup>181</sup> its melting point being 1529°C and it has magnetic characteristics.<sup>182</sup> The metal ores of the iron are mostly oxides,

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181 The Mohs scale of mineral hardness measures the resistance of various minerals against scratching by a harder material. This 10 level scale is named after the Austrian mineralogist, Carl Friedrich Christian Mohs (1773–1839). Two other methods for measuring hardness are known besides the Mohs scale: these are the indentation hardness and rebound hardness, for the weapons studied the indentation hardness is the most important (<http://www.kemenysegmero.hu/>). The hardness of steel is not a constant value, depending instead on its carbon content and the quality of its structure. (Pleiner 1967, 78).

182 Pleiner 2006, 18.

such as magnetite, hematite (red iron ore), limonite (brown iron ore) or the carbonate based siderite.

Iron is melted from iron ore in a bloom in the form of pig-iron (or iron sponge), the physical features of which are not appropriate for making tools or weapons.<sup>183</sup> The pig-iron contains various forms of iron microstructure like ferrite,<sup>184</sup> pearlite<sup>185</sup> and cementite.<sup>186</sup>

The steel attains its final characteristic by a combination of additives and forging. The steel is an alloy of iron including various elements but mostly carbon of at least 4 per cent. According to other definitions the steel is an iron-based alloy which can be processed by forging (hammering). The majority of steel from archaeological contexts also contains some phosphore (P) and arsenic (As), both of which made the steel harder but more brittle, and it reduced its carbon-absorbing capacity. The higher carbon content of the steel results in a hard and brittle material, however, its hardness could also be affected by several other factors.<sup>187</sup>

The steel is heated to between 700–900°C during the forging<sup>188</sup> resulting in a shapeable state called the austenite phase. The ancient blacksmiths would have recognised the appropriate temperature from the sound, the sparks and the colour of red-hot steel.<sup>189</sup> This hot and forged steel should be cooled by dry ash. Various shaping processes were used during the forging which can be divided into two groups: free hand<sup>190</sup> and die forging. During free hand forging the artefact is shaped on an anvil, while during die forging the heated iron

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183 The iron metallurgy and the production of pig iron is not included since its abundant literature offers a good overview (Gömöri 2000).

184 The *ferrite* is known as  $\alpha$ -ferrite too and used for the most stable form of iron in a body-centered cubic structure, which is a fairly soft metal containing low percentage of carbon or other materials.

185 The *pearlite* is a two-phased lamellar structure composed of alternating layers of ferrite and cementite, which is a harder structure than ferrite.

186 *Cementite or iron-carbide* is a chemical compound of iron and carbon ( $\text{Fe}_3\text{C}$ ), it is a hard and brittle material usually used for hardening the surface of iron artefacts.

187 According to its carbon content low carbon steel (less than 0.15% of carbon), mild steel (0.15–0.3% C) and high carbon steel (over 0.3%) can be distinguished.

188 The temperature depends on the carbon content, the higher the carbon content of an artefact the lower the temperature needed for forging.

189 The hard steel is forgeable in the state of red ignition, while the soft steel in the state of white heat.

190 Szabó 2001.

is sunk into the die or mould of an anvil producing almost identical forms,<sup>191</sup> being the first step toward mass production.<sup>192</sup>

In what follows, the steps in the manufacture of an ideal sword and a spear will be presented by an imagined blacksmith of the Avar Age.

During the manufacture of a sword the blacksmith first separated a piece of iron of between 1–2 kg in weight from the original pig-iron by cutting<sup>193</sup> using a chisel. The first step in the manufacture of a sword is the forming of the hilt-stem (or hilt-tongue) of the sword, creating an iron stick of quadrangular or rectangular cross section by hammering. This procedure is called upsetting.<sup>194</sup> The blacksmith held this stem with tongs while shaping the blade of sword. During the forming of the blade the cross section of the iron stick was narrowed and its length increased significantly by a process known as drawing down, made on an anvil.<sup>195</sup>

In most cases the sword blade was not made of a single piece of iron, since the high carbon content would have made it hard and brittle, while a blade with low carbon content would have been too soft, and therefore steels of various carbon content had to be combined for ensuring the hardness and flexibility needed for a weapon. The steel pieces of various carbon content were fixed together by forge welding.<sup>196</sup> In some cases the edges of the swords were made of hard steel with a high carbon content, while the fuller or the rest of the blade was made of soft iron of low carbon content. However, by using such simple processes there was a danger of injury of the blade by the welts, thus the edges could fall off.

Some more difficult processes were also used for making the blade flexible, like pattern welding where several small steel sticks of various carbon content were welt together, and in most of the cases it was fixed to the fuller of the blade. The edges were usually made of a hard steel of high carbon content. The pattern welding would result in a pattern on the blade which became visible as a result of natural chemical reactions resulting in various colours: the steel

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191 For *swaging* or *die forging* see: Pleiner 2006, 64.

192 This method was supposedly used by the manufacturing of 'high-quality' reed-shaped spearheads with grid-patterned rings and stirrups with rectangular loop (Bálint 1993, 196; Tomka 2008, 249), although it is not verified by metallographical analyses (on contrary: Piaskowski 1974).

193 Pleiner 2004, 199; Pleiner 2006, 54.

194 Pleiner 2004, 199; Pleiner 2006, 55; Szabó 2001a, 3.2.

195 Pleiner 2006, 55; Szabó 2001a, 3.1.

196 Pleiner 2006, 58–60.

becomes darker, the iron light grey, while the phosphorus remains bright. The patterns visible on the blade also marked its quality.<sup>197</sup>

Three main types of pattern welding can be distinguished: 1. full damast ('*Volldamast*'): the central part of the blade was forged from a pattern welded stick (in most of the cases fishbone pattern) and the edges were welded to this central part. 2. layer damast ('*Schichtendamast*'): the core of the blade is composed of flat steel covered by two pattern welded layers on each side, while the edges were made of high-carbon steel welded on the sides. 3. covering damast is in fact a special kind of layer damast: the blade was made of a homogenous steel covered by pattern welded layers.<sup>198</sup> During the Early Middle Ages the most common pattern created by pattern welding was a fishbone-pattern. The bending of pattern welded layers is a more difficult process, formed by multiplying layers and increasing quality.

The properties of the blade could be modified by various surface treatments. The surface of the forged product is usually uneven, therefore it was whetted or planished by hammering. Unfortunately in most of cases the original surface of artefacts from archaeological contexts is not observable.

The hardness and elasticity of the blade could be controlled by various heat treatments: in the case of a too hard and brittle blade it could be softened by re-heating and slow air cooling called annealing.<sup>199</sup> If the goal was the hardening of the blade carburisation or cementation was applied: during this process the steel was forged over charcoal, due to this procedure the iron in the state of yellow heat absorbs carbon monoxide (CO) creating a layer of cementite or iron-carbide ( $\text{Fe}_3\text{C}$ ) on its surface. The catalyzer was usually a material containing nitrite (like charred leather or horn). The carburisation was used only on some parts of the blade (primarily on the edges), while other parts were covered with clay for preventing the infiltration of carbon, hence these parts could stay soft and elastic.<sup>200</sup>

A different and more drastic method for hardening the blade was water cooling known also as quench hardening. This process was mainly used for high carbon steel, the hardness of which could be doubled or tripled by the quick water cooling, resulting in a modified crystal structure to the iron composed of

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197 The so-called Damascus or damast steel was made by a different process, thus the composite steel of the Early Middle Ages is called *pattern welding*, while the manufacture of Damascus steel *damascening*. (Maryon 1960, 29).

198 The types of pattern welding were described by Wilfried Menghin (1983, 17–18), but for the most detailed description, see: Maryon 1960.

199 Pleiner 2004, 199.

200 Pleiner 2006, 66–67.

long, lenticular crystals known as martensite providing extreme hardness and brittleness. Quench hardening in salty or soapy water could temper this effect<sup>201</sup> as a result of which the more stable and less brittle bainite could be formed.<sup>202</sup>

The martensite crystal structure is extremely hard and brittle, therefore such structure is not suitable for sword blades. If it occurs during the process of forging it can be corrected by tempering resulting in a finer pearlitic crystal structure. This process could be accomplished in lower (300°C) or higher (5–600°C) temperatures resulting in softer and less brittle steel.<sup>203</sup>

A modern way of surface hardening is enrichment in nitrogen: nitridation, although according to our present knowledge this procedure was not used in early medieval times, the only known iron artefacts with nitrite coming from cremation burials and the structure a consequence of secondary burning.<sup>204</sup> Finally, the forged sword was planished by hammering, while the plain blade was whetted, chiseled and its tip was shaped.<sup>205</sup>

The manufacture of a sword did not end at this point, since some edged weapons were fitted with a crossguard which could be formed using two various processes: either bent from an iron rod or a flat oval crossguard was forged and pierced by a drill.<sup>206</sup> In most cases the crossguard was not placed directly on the stem of the blade, but an iron spacer was used as a base. The crossguard was decorated with various methods: gold or silver wire inlay in iron<sup>207</sup> or it was covered with gold or silver sheets.

The hilt of the sword was made from hard wood (mainly beech) of oval cross section which was usually fixed by rivets to the flat iron hilt-tongue. The iron or copper alloy fixing rivets could be decorated with rosettes or rhombs. The end of the hilt was covered with an oval cap made of iron, copper alloy or silver sheet.

The blade was protected by a wooden (usually soft wood like lime) scabbard covered with leather, the cross section of which was usually similar to that of the blade. It was reinforced by metal bands decorated with stamped gold, silver or copper alloy sheets, with the tip of the scabbard covered with a cylindrical or conical chape.

Similar procedures were used to form a spearhead, but the main difference between their manufacture was in the sequence of these processes: first the

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201 Supposedly that was the reason why urine or blood was used in the hardening of swords.

202 Pleiner 2006, 68–69.

203 Pleiner 2006, 69.

204 Pleiner 2006, 70.

205 Pleiner 2006, 64.

206 Pleiner 2004, 199; Pleiner 2006, 58; Szabó 2001, 3.4.

207 Heinrich-Tamáška 2005, 92–98.

blade was forged and only then the socket. The blade was formed by upsetting and drawing down an iron rod, and in the case of winged spearheads the blade could even be pattern welded. One type of Early Avar spearhead is characterised by a connecting chap of hexagonal cross section on the lower part of the blade which was formed by shouldering during which steps were formed by using a scooper.<sup>208</sup>

The blade and socket of the spearhead could be formed from either a single iron rod or could be made separately. In the first case, the blacksmith, holding the blade with pliers, flattened the rest by hammering it into socket-wings, then bent it by a special method called rolling up, creating the cylindrical or conical socket.<sup>209</sup> The way of shaping the socket is usually perceptible to the naked eye: sometimes it rested open or it could be clasped together, it could be closed by a ring pulled over the socket or the socket-wings could be bent or hammered onto each other. In some cases this hammering could remove all manufacturing traces. When the socket was fully formed it could be welded to the blade: consequently, the blade could break off from the socket, so the neck of the spearhead would sometimes be reinforced by a pierced (but not bent) ring.

The neck of a javelin could also be twisted,<sup>210</sup> a similar process also being used in the manufacture of socketed arrowheads.

The surface and heat treatments used in the manufacture of spearheads is also similar to that of swords. Metallographic examinations revealed traces of cementation, quench hardening and tempering on Avar-age polearms. The surplus was removed by splitting from the blade by a chisel,<sup>211</sup> then it was flattened and sharpened.

The spearheads were decorated by various methods: the socket was inlaid with gold or silver wires in some cases, and in one case a spearhead's socket was sweated by copper.<sup>212</sup>

The finished spearhead was fixed to a wooden shaft of circular cross section with pointed end made of hard, but elastic wood (like beech or oak), in some cases it was even riveted to the shaft.

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208 Pleiner 2006, 55; Szabó 2001, 3.6. Open-die forging is not very probable in this case, since it is the first step towards standardised production, while every known connecting chap is instead absolutely unique.

209 Pleiner 2006, 55; Szabó 2001, 3.8.

210 Pleiner 2004, 199; Pleiner 2006, 58; Szabó 2001, 3.9.

211 Pleiner 2006, 58; Szabó 2001, 3.5.

212 This process was described by Theophilus Presbyter (1986, 145–146; Brepohl 1987, 291).



Every manufacturing process will inevitably leave traces on the iron artefacts and some of these are perceptible even on artefacts from archaeological contexts, although the majority of such traces are only accessible through archaeo-metallographic examination. There are several different methods for such analyses which can be usefully divided into two major groups: destructive and non-destructive methods.

Both the composition and structure of these materials can be analysed non-destructively,<sup>213</sup> however, such methods (X-ray emission, spectroscopy, electron microscope) usually examine only one point of the surface and as a result of which provide only very limited information on the metal structure of the artefact. The examination of chemical composition can be gravimetric, using weighing, or polarometric, using spectroscopy. Both methods can be used for iron artefacts: the phosphore (P) and manganese (Mn) content could be detected gravimetrically, while its nickel (Ni) and copper (Cu) content by polarometric methods.<sup>214</sup>

Analyses based on radiation could offer relevant information on the material structure of the artefacts, like CT or X-ray.<sup>215</sup> Pattern welding,<sup>216</sup> inner fractures and welding traces can be detected by X-ray.

The destructive methods can provide greater information on the material structure of the artefacts: the forging and the quality of iron. These examinations include sampling and microscopic analysis (magnification of 6–10×) of the polished sample. This phase can reveal non-metallic particles, while the metallic structure of the sample is examined, after etching the surface with acid,<sup>217</sup> by a metal microscope (magnification of 50–500×).<sup>218</sup> The composition, bending and surface treatment of an iron artefact can be identified using these methods.

Some destructive analyses of pattern welding do not include sampling: former sword blades were etched by acid, destroying the high-carbon steel parts of the blade.<sup>219</sup> A German archaeologist, Stefan Mäder presented a traditional method of Japanese sword polishers: he polished the whole surface of sword

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213 These non-destructive analyses are described by Tóth – Crutzen 1999.

214 Pleiner 1967, 79.

215 Tóth – Crutzen 1999, 17–23.

216 Koch 1977, 98. Taf. 182–188. The pattern welding of the sword blade from Csolnok was examined by X-ray (Somlósi 1988, 207–210).

217 Radomír Pleiner used nitale (a solution of alcohol and nitric acid) for this purpose (Pleiner 1967, 78).

218 Pleiner 1967, 78–79.

219 Böhne – Dannheimer 1961, 107–122.

blade making its original pattern visible. Unfortunately the width and quality of intact iron core of ancient weapons cannot be estimated by the naked eye, and it cannot be used on fully corroded iron artefacts, a particular disadvantage of the method for archaeologists.<sup>220</sup>

### 3.3 *Chronology and Distribution*

The two main coordinates for archaeology are chronology and geographical location of artefacts: using these factors every artefact or context can be located on a coordinate system making them suitable for answering further questions. In what follows, the various chronological methods used in Avar archaeology will be presented.

One of the basic relative chronological methods is typochronology: the premise of this method is of a linear development between types leading from simple to more complex forms in an evolutionary sense. Typology, mainly its initial phase, and predicated on Darwinist principles, is the archaeological application of this evolutionism.<sup>221</sup> This method was used for establishing chronologies based along evolutionary lines, although much data contradicts a unilinear development, and as a result of which typochronology is best used only in combination with other independent methods: the study of archaeological context, combination statistics or stratigraphy.

The examination of artefact combinations like seriation is a higher level of relative chronology although its wider use came as a result of the application of computers in archaeology. The method is based on a forced sequencing of artefact combinations (such as burial assemblages). However, the start and end point of the examination, together with the input data, is always determined by the researcher, a subjective factor in this method. It is important to note that the result of seriation is only as trustworthy as the input data: the primary processing of artefacts (classification) is therefore of great importance.

Seriation is mainly useful for processing large numbers of assemblages (mainly burials) furnished with several artefacts, thereby reducing the statistical margin of error. One excellent example for the application of this method is the monograph on the Pleidelsheim cemetery in which Ursula Koch seriated a large number of Merovingian burials creating a chronological scheme for south Germany in the Merovingian period.<sup>222</sup>

<sup>220</sup> Mäder 2000, 17–27; Mäder 2002, 277–285; Mäder 2004, 23–31.

<sup>221</sup> The method of typology was mainly formed and applied by Oscar Montelius (1843–1921) who wanted to create a chronological sequence for the Bronze Age in Scandinavia. Detailed description and critique of the method: Eggert 2005, 181–191.

<sup>222</sup> Koch 2001.

The chronological limits of the present study are framed by the migration and settling of the Avars in the Carpathian Basin (567–568)<sup>223</sup> and their disappearance from written sources during the first half of 9th century.<sup>224</sup> The weapons of the Carolingian culture in the western periphery of the area are not studied, since they mainly belong to the second half of the 9th century and as the heritage of Frankish colonisation they cannot be considered as a continuation of the Avar tradition.<sup>225</sup>

The chronology of the Avar Age is basically historical,<sup>226</sup> as a number of chronological markers can be related to historical events, some of which (like the arrival of the Avars in the Carpathian Basin) cannot be overlooked although the intention is to use periods and phases based strictly on archaeological sources.

The Avar Age can be periodised relatively easily due to the great number of richly furnished burial assemblages. The 'Avar' archaeological culture of the 7th–8th century Carpathian Basin was closely connected to neighbouring cultures (western: Merovingian and early Carolingian; eastern: Eastern European steppes; southern, Mediterranean: Byzantium and Italy). In what follows, the Avar chronology will also be examined in its external connections, by relating the internal chronology of the 'Avar' culture to neighbouring chronological systems.

The chronological framework of the Avar Age is its tripartite subdivision into Early, Middle and Late phases known also as the Early, Middle and Late

223 For written sources of the appearance of the Avars, see: Kollautz – Miyakawa 1970; Avenarius 1974, 67–84; Szádeczky – Kardoss 1992, 32–35, for history of events: Pohl 2002, 52–57.

224 The end of Avar Age is still debated: the end of Avar Qaganate is related to the Frankish-Avar wars (791–799) and the campaign of the Bulgarian khan Krum against them (803–804). Some archaeologists assume the termination of workshops making cast belt mounts (Daim 1987, 155; Friesinger 1972a, 156–158; Friesinger 1972b, 43–45; Friesinger 1971–74; Friesinger 1975–77 and Friesinger 1984; Szameit 1987, 166), while others accepting this premise, used the method of double dating (distinguishing the date of manufacture and deposition on the basis of the age of the deceased) (Szalontai 1991, 463–481; Szalontai 1995, 127–143; Szalontai 1996, 145–162). A historical interpretation was used in the valley of Zala river in Western Hungary where Béla Miklós Szőke supposed a continuous Avar population until the foundation of Mosaburg in 840 (Szőke 1991, 9–17; Szőke 1992a; Szőke 1992b, 841–968; Szőke 1994a; Szőke 2004; Szőke 2007; Szőke 2008b, 52), while Alán Kralovánszky (1957, 175–186) dated the end of 'Avar' cemeteries in the 10th century.

225 The weapons of the Carolingian period represent a new age in the Carpathian Basin characterised by strong western influences, thus Carolingian weapons will only be mentioned where they were found in Avar burials.

226 Bóna 1988.

568	600	625	650	675	700	725	750	775	800	825	850
historical events	Avar – Byzantine wars		Samo	Carolingian wars							
Csallány 1946–1948				MA: 680–720							
Kovrig 1963	EA: 568–650			MA: 650–680							
Bóna 1970				MA: 670–710							
Daim – Lippert 1984a	EA: 568–670			MA: 670V730	LA 1	LA 2	LA 3				
Daim – Lippert 1984b	EA: 568–650			MA: 650–710 LA: 710–c. 800							
Stadler 1991	EA 1: 568–620		EA 2: 620–665	MA 1: 665–690	MA 2: 690–710	SA 1: 710–725	SA 2: 725–760	SA 3: 760–810/830			
Zábojník 1991	EA (FS): 568–650			MA 1	MA 2	SS 1	SS 2	SS 3	SS 4		
Garam 1995			1. Phase	2. Phase		3. Phase		4. Phase		5. Phase	
Martin 2008	EA : 568–630			MA: 630–700 LA: 700–800							
Gavritukhin 2008			Bócsa – Pereshchepina horizon	MA 2. Igar – Ozora – Dunapentele horizon							
present study	EA: 568–c. 650			MA: c. 650–c. 700 LA: c. 700–c. 800							

Avar period. This periodisation is based on the typochronological examination of certain artefacts types (mainly ornamented belt sets and jewellery), their context and combination (seriation), and by horizontal stratigraphical analyses of cemeteries with several burials.

The periodisation of the Avar Age was one of the major tasks of Hungarian archaeology from its positivist, historicizing beginnings: these early studies dividing it into two phases, however, the right sequence of belt sets with stamped and casted belt mounts, upon which these phases were based, only became evident during the 1930s.<sup>227</sup> The chronological group with belt mounts stamped of metal sheets was first subdivided by Gyula László,<sup>228</sup> followed by Dezső Csallány who created the basis for a separate 'Middle Avar phase' dated between 680 and 720 and linked to Onogur Bulgar immigration.<sup>229</sup>

This tripartite periodisation became a coherent system with the analysis of the great Avar cemetery near Alattyán by Ilona Kovrig who divided these phases based on the typology of various artefacts and elements of burial rite.<sup>230</sup> She used coin-dated burials and analogies from neighbouring regions (like Merovingian chronology)<sup>231</sup> in creating the absolute chronology of the Avar Age.<sup>232</sup> She emphasised the continuity between the Early and Middle phases, and dated the beginning of the Late phase to the 680s.<sup>233</sup>

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227 These Avar-age artefacts were divided by Joseph Hampel into two groups: stamped and cast. Hampel dated the cast group via Roman coins found in these burials to the 4th century following Vilmos Lipp (Hampel 1905, I. 17–22). András Alföldi was the first who proved that these coins were much earlier (4th century) than the burials themselves (8th century) (Alföldi 1934, 287–307). The studies of Nándor Fettich verified this interpretation, Fettich dating the technological change for casting to the last quarter of the 7th century (Marosi – Fettich 1936, 81. 97–98; Fettich 1943, 53–56). This sequence was also verified by the stratigraphical observations of Dezső Csallány (1939, 133–134).

228 László 1940, 145–158; László 1941.

229 Csallány 1946–48, 356–357; Csallány 1952, 245–252.

230 Kovrig 1963, 226–227.

231 Mitscha-Märheim 1949, 125–131.

232 Ilona Kovrig dated the circular stirrups with rectangular loops and reed-shaped spearheads to the beginning of the Early phase (second half of the 6th century) using Inner Asian analogies (Kovrig 1963, 230–231). The 1st group of Alattyán is identical with the Early phase containing the Kunszentmárton burial and its analogy from Akalan (Bulgaria), the end of the period being dated by the coins of Heraclius to the middle of the 7th century (Kovrig 1963, 228). The 2nd group is dated between cca. 650 and 680 and not by the migration theory of the Onogur-Bulgars in 670s (Nagy 1895; Csallány 1946–48, 356–357; László 1955, 289–290), since Kovrig drew attention to the fact that similar artefacts do not occur in Bulgaria where in case of Bulgarian movement they would have been expected.

233 She dated the beginning of the 3rd group earlier than Dezső Csallány (1952, 245–250) and Herbert Mitscha-Märheim (1957a, 134) who both dated it to the 720s. The main argument

Besides chronological and interpretative problems of the Middle Avar phase, the reason for change at the beginning of the Late Avar phase was also a matter of some debate: with two possible reasons for the spread of bronze casting, being of either Byzantine<sup>234</sup> origin or as a consequence of the migration of an eastern steppe nomadic group,<sup>235</sup> while the later research also supposed a fashion change within the continuous population.<sup>236</sup>

István Bóna played an important role in the research of Avar archaeology, wherein he reconsidered the chronological questions of the 'Middle Avar period' in an article on the burial from Iváncsa, and dated its beginning to the 670s based on the so-called coin imitations and the lack of Byzantine coins.<sup>237</sup>

Éva Garam offered new arguments concerning the detailed chronology of the Avar Age, in particular the study of various aspects of the chronology of the 'Middle phase',<sup>238</sup> and later by the analysis of the horizontal stratigraphy of the large cemetery at Tiszafüred–Majoros, which contained 1282 burials, creating a robust basis for the subdivision of the Late phase.<sup>239</sup> An important step in creating the absolute chronology of the Avar Age was the examination of coin-dated burials.<sup>240</sup>

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for the early dating was the discontinuity between the Middle and Late phase, the beginnings of which were linked to a migration.

- 234 Jan Eisner proved the right sequence of Hampel 3 and 2 groups respectively (Eisner 1947, 45–54), and regarded the cast metalwork of Byzantine origin (Eisner 1952, 404–405). Several art-historical studies were written under his influence emphasizing the late antique origin of the cast motifs (Dekan 1972, 317–452; Szőke 1974, 60–141).
- 235 Gyula László linked the widespread appearance of cast bronze artefacts to a migration from the region of the Kama river (Eastern Europe) which according to his theory was composed of two distinct groups: the first used mainly the griffon motif coming from Inner Asia, while the other using vegetal ornaments from the Ural Mountains region (László 1955, 179, 284).
- 236 The continuity between the Middle and Late phase was emphasised by Péter Tomka (1975; Tomka 1989) on the basis of burial rites. Horizontal stratigraphy of large cemeteries like Leobersdorf and Tiszafüred show similar continuities (Daim 1987; Garam 1995).
- 237 István Bóna (1970, 243–263) drew attention to a number of phenomena connected to migration: changes in settlement area, orientation of graves, rite of burials with horses, new cemeteries and centres, hoards, new kinds of belt-sets, and new weapon types (sabre). He dated these changes to the time of Constantine IV (668–685) (Bóna 1971a, 245 [29]–247 [31]).
- 238 Garam 1976, 129–147; Garam 1978, 206–216; Garam 1979, 85–86.
- 239 Garam 1995, 390–423. Éva Garam divided the cemetery into five chronological phases.
- 240 The study of Éva Garam (1992, 135–250) on the coin-dated Avar-age burials is of great significance, although as Max Martin (2008, 163) noted, the method of coin-mirror (*Münzspiegel*) based on chronological horizons was not used.

The chronological contributions of Falko Daim are important from a methodological point of view, since he combined the methods of horizontal stratigraphy and combination statistics in the publication of the Sommerein cemetery, and distinguished four steps for establishing a chronology: 1. creating types (classification), 2. seriation, 3. mapping, 4. distinguishing phases of the cemetery with special attention to its demographic features.<sup>241</sup> Daim dated the beginning of the Middle Avar phase to the middle of the 7th century.<sup>242</sup> This chronological model was finally elaborated on in the publication of the cemetery from Leobersdorf.<sup>243</sup> According to his view the great number of Middle phase burials suggests a timespan of about 60 years.<sup>244</sup>

Among statistical methods, seriation was used for subdividing these three phases by the analysis of belt sets. An example of such studies is that of Peter Stadler who divided the Avar Age into 30 year periods.<sup>245</sup> The method was also used by Jozef Zábajník for analysing belt sets from Avar-age cemeteries of Slovakia and as a result of which he distinguished four sub-phases of the Late phase,<sup>246</sup> which could be paralleled by the phases of Falko Daim and Éva Garam. Later on Zábajník used the results of this seriation for horizontal stratigraphical analyses of Avar cemeteries from the northern periphery of the Avar Qaganate.<sup>247</sup>

Besides the abovementioned chronological summaries, examination of several artefact types is of considerable benefit to chronology, like those of Éva Garam,<sup>248</sup> Gábor Kiss<sup>249</sup> and Béla Miklós Szőke.<sup>250</sup>

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241 Daim – Lippert 1984, 61–62 distinguished two sub-phases of the Middle phase.

242 The absolute chronology of these phases was created by a combination of coin dating, imported goods in burials (inlaid iron belt sets, seaxes), and historical events (Daim – Lippert 1984, 91).

243 Falko Daim (1987, 155) demonstrated that the artefacts of Bavarian-Alemann origin contradict the late dating (700/720) of the transition between the Middle and Late phase. (Daim – Lippert 1984, 158).

244 Daim proposed two possibilities for the absolute chronology of the Middle phase: 1. 670–730 or 2. 650–710 (Daim – Lippert 1984, 159), and considered the second more probable.

245 Peter Stadler combined his seriation (Stadler 1985) with C14 dates and coin dating (Stadler 2005, 113–120).

246 Zábajník 1991, 219–321.

247 Zábajník 1995, 205–336.

248 Belt sets of Byzantine origin: Garam 1999/2000, 379–391; Garam 2001, 113–150.

249 Cast bronze belt-whirls (propeller-shaped belt-mounts) with animal heads (Kiss 1998, 461–495), button-ended strap-ends (Kiss 2000, 411–418).

250 Flower ornaments and pointed background: Szőke 2001, 103–140, chronology of women's jewellery of the Late phase: Szőke 1992b, 842–968.

The chronology of the Avar Age became an international reference point for early medieval studies in drawing comparisons with Merovingian archaeology, such as those by Frauke Stein and Max Martin. Stein aimed to identify the archaeological heritage of 8th century ‘nobility’ in Germany,<sup>251</sup> and therefore she mainly focused on chronological links between the Late Avar and late Merovingian—early Carolingian periods.<sup>252</sup> Max Martin made some notes on Avar chronology in relation to the Környe cemetery<sup>253</sup> and on inlaid iron belt-sets of the Kölked A cemetery.<sup>254</sup> Martin’s chronology was based on the belt-sets from male burials, which, according to this view, are chronologically parallel in the Merovingian area and Avar Qaganate, and therefore dated the beginning of Middle phase to 630s. He associated the burials of the Bócsa horizon with its first sub-phase.<sup>255</sup>

Avar chronology also attracted the attention of Soviet archaeologists. Anatolij Konstantinovich Ambroz tried to create a uniform chronological system for early medieval Eastern Europe by synchronizing various local chronological schemes using the Crimea and Carpathian Basin as starting points.<sup>256</sup> Although his system is much debated,<sup>257</sup> it was the first chronological overview of Eastern Europe on a wider scale. He was followed in this approach by his student Igor Gavritukhin: he first surveyed the Eastern European chronology in his study on the Gaponovo hoard, which comprised a part of the Martynovka horizon,<sup>258</sup> and later paralleled the Middle phase of the Avar Age with early Khazar archaeology.<sup>259</sup> Similarly to Max Martin he considered that the Bócsa – Pereshchepina horizon belonged to the Middle phase, beginning in 620–30s, while the chronological horizon known as ‘Igar – Ozora – Dunapentele’, traditionally accepted as ‘Middle Avar’, represented only the second half of his Middle Avar period.<sup>260</sup>

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251 Stein 1967, 74–84, 104–111.

252 Stein 1968, 233–242.

253 Martin 1973, 110–112; Martin 1989, 65–90.

254 Martin 1996, 346–361.

255 Martin 2008, 143–173.

256 Ambroz 1968, 10–83; Ambroz 1973, 289–294; Ambroz 1971, 106–134.

257 Later he refined and revised his original model (Ambroz 1981; Ambroz 1988; Ambroz 1995).

258 Gavritukhin – Oblomskij 1996, 69–76.

259 Gavritukhin 2001, 45–162; Gavritukhin 2005, 378–426.

260 Gavritukhin 2001, 154–155. He paralleled the Bócsa horizon with Pereshchepina find and Ozora – Igar horizon with the Voznesenka – horizon (Gavritukhin 2005, 406–411; Gavritukhin 2008, 82–85).



All of the aforementioned opinions amply demonstrate the unresolved nature of a number of problems concerning the chronology of the Avar Age.

In what follows, the chronological position of certain weapons will be determined by their burial context (other grave goods) and their horizontal stratigraphic position in the cemetery. Unfortunately, in many cases there is insufficient archaeological data available, since a number of artefacts are not useful for dating, and where in the case of a number of sites horizontal stratigraphic examination or cemetery plans are not available, as well as some cemeteries being unsuitable due to their being incompletely researched or having a low number of graves. The tripartite division of the Avar Age will be applied with chronological boundaries established around 650 (Early–Middle transition) and 700/710 (Middle–Late transition). In some cases even stages (sub-phases) were distinguished, such as in the case of Early and Middle phases, where two stages have been identified, while in the Late Avar period three stages have been used in accordance with Éva Garam<sup>261</sup> and Falko Daim.<sup>262</sup> Finer chronological distinctions were not utilised, following the methodological warnings of Heiko Steuer concerning those established on the basis of the timespan between the date of manufacture, use and deposition.<sup>263</sup>

Chorology examines the spatial, geographical distribution of artefacts. Distribution maps showing various artefact types became popular in archaeological research for identifying archaeological cultures with ethnic groups, though it has long been evident that mapping of single finds or their combinations is insufficient for such purposes. Distribution maps are thus mainly used for examining the origin and workshops of particular artefacts or for detecting regional phenomena (like burial rites, etc.).

The interpretation of these distribution maps has a number of difficulties: spatial distribution of artefact types depends on depositional rules, whereby their different nature can distort results. The various approaches taken in research or presentation of different regions can result in significant differences, even in regions using the same burial rite.

The names of various regions of the Carpathian Basin are frequently used in the present study, and therefore their presentation is important so that the reader has a clear idea of what is meant by each of them (map 1). The Carpathian or Pannonian Basin is a region enclosed by the Carpathians around the middle reaches of the Danube river. Its hydrographics is dominated by two

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261 Garam 1995, 390–423.

262 Daim 1987, 155.

263 Steuer 1998, 141.

rivers, the Danube and its tributary the Tisza, while their tributaries play a considerable role in dividing up regions in the area.

The central part of the Carpathian Basin can be divided into two parts: Transdanubia and the Great Hungarian Plain. Transdanubia, the former Roman province of Pannonia, lies west of the Danube (being today the western half of Hungary), and is characterised by a hilly landscape with the main lake in this region, the Balaton, dividing this area into northern and southern parts. The Great Hungarian Plain is the lowland area in the eastern part of Hungary, along with Vojvodina and Banat in Serbia, the western edge of Romania, Eastern Slovakia and Southwestern Ukraine, which incorporates the Danube-Tisza interfluvium with its sand dunes, including Bačka (Bácska) and the Transisya region east of the Tisza river, including Banat. The lowlands north of the Danube were settled only during the Middle and Late Avar phase and are the northern continuation of the Little Hungarian Plain (Kisalföld), today known as Southwestern Slovakia. The Transylvanian Plateau is a special part of the Carpathian Basin enclosed by mountains (Carpathians and Apuseni Mountains). The settlements of the Avar population in the area probably occurred only during the 7th century, while formerly it was populated by the Gepids. Most of the known sites of the region were found in the valley of the Mureş (Maros) river.

### 3.4 *Armament and Society*

Elements of early medieval armament are mainly known from burial assemblages, therefore their examination is inseparable from the analyses of cemeteries. Two main approaches are known in the social interpretation of weapons: the Anglo-American and German (Continental) schools. In spite of similarities, these schools developed parallel to one another without communication between them.<sup>264</sup> Hungarian and East-Central European archaeology in general was mainly influenced by the Continental (German) school for political and linguistic reasons, while Anglo-American archaeological theories have had almost no impact on Hungarian early medieval archaeology.

Three main approaches exist for the social analysis of cemeteries and the examination of weapon combinations: 1. qualitative, 2. quantitative and 3. multi-dimensional.<sup>265</sup> All three approaches are used in Avar archaeology parallel to various international trends as mainly influenced by developments in German archaeology.

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<sup>264</sup> Härke 1989, 185–194.

<sup>265</sup> Härke 1992, 23.

The premise of the qualitative approach is that the grave goods reflect the legal and social status of the deceased, with the weapons buried in the grave reflecting their original armament. This approach was applied by Heiko Steuer in German archaeological research on weapon combinations, which were regarded as a direct reflection of personal armament.<sup>266</sup> A more developed form of the qualitative approach was taken by Rainer Christlein who classified burials into three quality groups (A–C) based on the grave goods, and drew direct correlations with the wealth of the deceased which according to his view was equal to their legal status (free, half-free, slave).<sup>267</sup> A similar position is also found within British research: Chadwick Hawkes linked some weapon types with social stratification,<sup>268</sup> while Leslie Alcock created a system of quality levels and, similar to Christlein's view, identified it with specific social strata.<sup>269</sup>

The premise of the quantitative school was that a quantitative analysis of burial rites would directly reflect the organisation of the complex societies upon which they are based. This approach has two levels, whereby such an analysis can be applied on a local level, such as to a cemetery, or on a regional (even interregional) level. Quantitative analyses in British research were made by Chris J. Arnold who studied weapon combinations and weapon numbers<sup>270</sup> and John F. Shephard who analysed Anglo-Saxon burial mounds.<sup>271</sup> In Avar archaeology quantitative methods were applied by József Szentpéteri and Jozef Zábajník who both used weapon numbers and statistics for examining social stratification.<sup>272</sup>

Multi-dimensional analysis is a combination of qualitative and quantitative methods, examining the role of a burial assemblage in the context of an ancient society at a communal or regional level,<sup>273</sup> an example of which is the monograph by Heinrich Härke on Anglo-Saxon weapon burials.<sup>274</sup>

A significant question is whether or not such weapon combinations found in burial assemblages reflect the armament, social or legal status of the deceased. Some researchers remain optimistic in believing that the combina-

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266 Steuer 1968; Steuer 1970.

267 Christlein 1973, 147–180.

268 Hawkes 1973, 186–201.

269 Alcock 1981, 168–183.

270 Arnold 1980, 81–142; Arnold 1988.

271 Shephard 1979, 47–79.

272 Szentpéteri 1985; Szentpéteri 1993; Szentpéteri 1994.

273 Steuer 1982.

274 Härke 1992.

tion of weapons are representative of the armament and even social position of the person buried.<sup>275</sup> Others even suggest that these weapon combinations represent a fighting method and can be interpreted functionally.<sup>276</sup> Besides the armament, social hierarchy and fighting methods, several other factors could influence the deposition of weapons in burials, like burial rite, the age of the deceased, their role in the community and the ideology of the society.<sup>277</sup> The most important factor in the examination of Avar-age weapons is that the vast majority are found in burials,<sup>278</sup> which represents intentional deposition, reflecting either the intentions of the buried person or rather the community organizing the funeral.<sup>279</sup>

The quality, combination and quantity of the weapons deposited in a grave are the results of a burial rite. Weapons could be treated variously, they could be deposited intact or injured, deformed, fragmented or re-heated. Deposition of a whole armament is impossible for various reasons like size,<sup>280</sup> value<sup>281</sup> or inheritance of the fighting equipment. Weapons were mainly deposited as symbols in graves, as represented by the armour lamellae deposited as amulets in some female burials.<sup>282</sup> Weapons could symbolise power, wealth and

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275 Steuer 1968, 18–87; Steuer 1970, 352–353.

276 Frank Siegmund (2000, 177–194) separated functional sets through statistical methods, while Robert Reiß (2007) examined the relation of close and distant combat based on weapon combinations.

277 Härke 1992; Härke 1997, 119–127.

278 Most of the Avar-age weapons are found in burials, and only one spear is known as a settlement find (Kölked–Feketekapu) (Hajnal 2003, 190–191, 8. kép 6). Some spears are regarded as offerings, although most of these artefacts do not have any clear archaeological context except for the Csengele find (Csallány 1939, 129–131; Csallány 1953, 133–141; Kovrig 1955a, 30–44; Tomka 1986, 35–57; Némethi – Klíma 1992; Liska 1995, 91–98).

279 For distinguishing intentional and functional data in archaeology: Härke 1993, 141–146.

280 One example for extreme sized weapons are siege engines known from Byzantine sources (Kardaras 2005), as an exception for such a behaviour see the grave monument of Atatürk (Anıtkabir) in Ankara, where a cannon and his two cars were deposited.

281 Deposition of complete arms is extremely rare, only three such examples are known from the Avar age: Kunszentmárton (Csallány 1982), Tiszavasvári (Csallány 1960a), Hajdúdorog (Csallány 1960b) and Budakalász (Pásztor 1995, 58–78), similarly no helmet find is known from the Avar Age and helmets are extremely rare finds from Early Medieval burial context, although ‘*Spangenhelm*’ was worn by almost every Byzantine soldier during the 6th century, they are known only from elite burials of Barbarians, who used it as a status symbol (Steuer 1987, 191–197).

282 Such use of Avar-age lamellar armour is discussed in the studies of Dezső Csallány, who drew attention to the fact that some lamellae were buried in women’s or children’s graves. (Csallány 1972, 9–12) Arrowheads could have a similar function.

protection, their great value could show the richness of their owner and indirectly their social position.<sup>283</sup> As later medieval examples show, weapons could be used during coronation or investiture, like Saint Stephen's sword in Prague,<sup>284</sup> the 'sabre of Vienna'<sup>285</sup> and 'Holy Lance' for German-Roman emperor,<sup>286</sup> or Saint Steven's spear (LANCEA REGIS).<sup>287</sup> The use of spears as royal symbols is well known from the early medieval Lombards, and according to the description of Paulus Diaconus it was used as an investiture symbol during the coronation of kings.<sup>288</sup>

The social interpretation of weapons is particularly problematic and only the exact context of the buried weapon can reveal its original meaning in ancient society.

### 3.5 *Methods of Data Collection*

The present volume is based on the edged weapons and polearms studied from several museums in the Carpathian Basin, which were partly published in various monographs and journals, but which largely remained unpublished.<sup>289</sup> Unfortunately not all weapons studied in this volume could be examined personally, partly because of their destruction during World War II, when the

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283 Merovingian archaeology usually interprets weapon burials as signs of free men of full rights (Steuer 1968).

284 Lovag 1986; Fodor 2000.

285 Fodor 2000.

286 Schramm 1955; Kirschweger 2006.

287 Kovács 1975; Kovács 1995.

288 For the royal spear of the Lombards: (Gasparri 2000, 98–101). The Holy Lance of Vienna became a royal symbol because of its Christian meaning (Schramm 1955, 492–537; Kirchweger 2006, 23–36).

289 Weapon finds were studied in the following museums: Hungary: Hungarian National Museum and Budapest Historical Museum in Budapest, Balaton Museum in Keszthely, Móra Ferenc Museum in Szeged, Koszta József Museum in Szentés, Xántus János Museum in Győr, Wosinsky Mór Museum in Szekszárd, Szent István Király Múzeum (Saint Steven King Museum) in Székesfehérvár, Déri Museum in Debrecen, Göcseji Museum in Zalaegerszeg, Jósza András Museum in Nyíregyháza; in Slovakia: Východoslovenské Múzeum (Eastern Slovakian Museum) and Slovakian Archaeological Institute (AÚ SAV) in Košice, Slovakian National Museum (Slovenské Národné Múzeum) in Bratislava and Danubian Museum (Podunajské Múzeum) in Komárno; in Croatia: Croatian National Museum in Zagreb. I could personally study edged weapons from Zillingtal cemetery at the Institute for Pre- and Protohistory (Institut für Ur- und Frühgeschichte) of Vienna University. Unfortunately I had no opportunities to study Avar weapons from Romania and Serbia, thus these finds were only studied from publications.

collections of several museums were lost or destroyed,<sup>290</sup> and also because of limited time and travel opportunities.

Some previously published studies and overviews on Avar weaponry were of great help in establishing a data collection of edged weapons and polearms. The first such overview of Avar polearms was made by Ilona Kovrig in 1955,<sup>291</sup> a general summary of Avar weapons was made in the Master's thesis of Attila Kiss from 1962,<sup>292</sup> and László Simon surveyed early Avar swords.<sup>293</sup> During this work, archival sources were of considerable use, the notes of János Kalmár (manuscript) were particularly invaluable because it preserved data from swords already lost or destroyed during World War II,<sup>294</sup> and the notes and drawings of László Kovács were especially valuable for the study of sabres.<sup>295</sup> I am much indebted to József Szentpéteri, whose gathering of information on Avar weapon burials for his Candidate thesis<sup>296</sup> and his cadastre of sites (ADAM) represents an especially important source of data. During my work all previously mentioned data was checked and completed if possible.

Altogether 1,189 burials with edged weapons and/or polearms were known from the Avar-age Carpathian Basin by 2009. The number of close-combat weapons almost doubled in the last few decades due to intensive excavation and publication activity.<sup>297</sup> József Szentpéteri in 1993 listed only 131 edged weapons from the Early phase and 182 from the second half of the Avar Age (Middle and Late phase), while he listed 103 polearms from the Early and 97 from the Middle and Late phase.<sup>298</sup> Upon completion of my doctoral thesis in 2009, the total number of edged weapons was found to be: Early phase: 273, Middle phase: 128 and Late phase: 188 examples. During the last few years this number has increased further, and now altogether 704 edged weapons are known from the Avar Age, 315 of which are dated to the Early phase, 162 to the Middle phase and 188 to the Late phase. The number of polearms known

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290 The collections of the Museums of Keszthely and Kecskemét were destroyed during World War II.

291 Kovrig 1955a, 30–44; Kovrig 1955b, 163–192.

292 Kiss 1962.

293 László Simon finished his thesis in 1986 (Simon 1991), he listed 184 Early phase swords.

294 I am indebted to Dr. László Kovács and Péter Langó for this invaluable source of information.

295 For these notes and drawings thanks go to László Kovács.

296 Szentpéteri 1993; Szentpéteri 1994.

297 The huge number of publications are partially due to the new series of *Monumenta Avarorum Archeologica* edited by Éva Garam and Tivadar Vida.

298 József Szentpéteri (1993, 216) did not distinguish the Middle and Late phase following a chronological study of István Bóna (1988, 437–463).

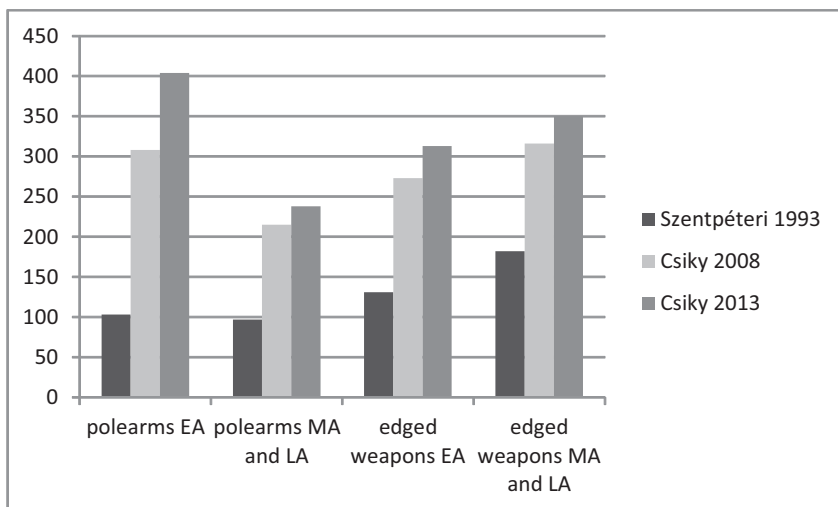


DIAGRAM 1 *Increasing number of examined weapons.*

was: Early phase 308, Middle 39 and Late phase 176 examples.<sup>299</sup> Several new polearms have been found and published after finishing the thesis, therefore this work is based on 658 polearms, the chronological division of which is the following: 407 examples are dated to the Early phase (map 2), 39 to the Middle phase (map 3) and 200 to the Late phase (map 4). The increasing number of known weapons inevitably improves the representativity of the conclusions drawn from their analysis.

The collection of weapons presented is still not complete as a consequence of limited access to the artefacts themselves, in some cases the finds not having been inventoried or restored, while some artefacts known from literature are lost from museum collections. It is important to note that the number of excavated, restored and published pieces is constantly rising, and it is impossible to get information on all examples, despite attempts to do so.

The examination of early medieval weapons is problematic for various reasons: iron corrosion causes damage to the artefacts, although their state depends on the actual soil, humidity, methods of conservation and circumstances of deposition.<sup>300</sup> Unfortunately several already restored iron artefacts are re-corroded, in several cases due to the scale-shaped or lamellar corrosion

299 This means a 91% increase for edged weapons, and 160% increase for polearms compared to the situation in 1993.

300 The condition of archaeological finds changes radically during excavation, and even more so for iron artefacts which are one of the most unstable of all materials because of their

destroying their original surface, therefore available archival photographs and drawings for these artefacts were used because of their changing condition.

The conservation and inventory methods are usually not standardised across East-Central Europe, causing distortions: most of the wooden scabbards were restored on the blades hiding the blade itself and providing information only regarding the former. These were not commonly examined botanically and therefore it is very important to distinguish blades with or without wooden scabbards showing their state of visibility.

Scientific examination is increasingly important for archaeological research, therefore available results from metallographic,<sup>301</sup> botanical (wood of the hilt, scabbard or shaft), zoological (in the case of horse burials) and anthropological (age, sex and health condition of the deceased) examinations were used for exploiting 'hidden' information.

The catalogue of artefacts upon which this volume is based was originally made as a Microsoft Access database containing the description, size, type of weapon, rite of the burial, other grave goods helping the dating, anthropological data of the deceased, and results of scientific examinations, which was then converted into a Microsoft Word document which made up one volume of the original doctoral thesis. As a consequence of its large extents, only parts of it are cited in the present study, such as the site, grave number, type, dating and literature for the cited artefacts, while more voluminous descriptions are omitted. Distribution maps for most of the types were created by open-source online programs like 'GPSvisualizer' and 'ESRI ArcGis Explorer'.

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corrosion. Unfortunately the depositories are mostly far from ideal causing further decay (Korek 1988, 167–168; Séd 1979, 18).

301 The most important metallographic examinations on Avar weapons are: Piaskowski 1974, 113–130. on the Környe cemetery; L'ubomír Mihók (et al. 1991, 67–101; Mihók et al. 1995, 145–188) on Želovce and Košice-Šebastovce cemeteries (Slovakia); Radomír Pleiner (1967, 77–188) in the Czech Republic; Norbert Hofer and Matthias Mehofer in Austria (Mehofer 2005). Some new analyses were made with the help of Budapest Technical University and Széchenyi University of Győr upon my request.



## Polearms

The Avars arrived in the Carpathian Basin around 567–568 after fleeing from the Turks and their establishment of an empire in Inner Asia.<sup>1</sup> Due to its geographical position, Avar material culture was influenced by traditions from the steppes (Inner and Central Asia, Eastern Europe), Byzantium and Merovingian West.<sup>2</sup> This process is reflected in the polearms, one of the most important close combat weapons of the Avars. The old Turkic word for spear ‘*süngü*’ appears often on Turkic runic inscriptions on monuments of Inner Asia suggesting an important role for polearms in the contemporary armament of the steppes.<sup>3</sup> The spear was clearly a significant weapon for the Avars as demonstrated by the 656 recently known spearhead finds from this period, exceeding the number of Central Asian Turkic<sup>4</sup> and ancient Hungarian (10th–11th centuries) polearms.<sup>5</sup>

Among the 658 catalogue entries, 126 specimens (19.15%) could not be classified because of either damage or lack of information, while most of them: 532 specimens (80.85%) were attributed to the form-group of polearm blades (maps 2–4). The classification was mainly limited by the poor preservation of artefacts: in some cases only the socket of the spearhead survived<sup>6</sup> and several

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1 Pohl 2002, 27–31.

2 Daim 2003, 463–480.

3 The significant role of these spears is evident from the fact that the word ‘battle’ (*süngüş*) and ‘spear’ derive from the same etymology (DTS 517; Erdal 1991, 566–567).

4 According to the data of Jurij Khudiakov (1986, 156–157) only 8 spearheads were known from Inner Asia from the 6–10th centuries. Gleb V. Kubarev added four further examples (Ulandryk kurgan I. 20. Barburgazy kurgan I. 20. Balyk-Sook kurgans I. II. and 23) (Kubarev 2005, 98).

5 Only 18 spearheads are dated to the early Hungarian period (generally known as the age of Hungarian conquest and state foundation, 10th–11th centuries) (Kovács 1972, 84–94; Kovács 1977, 62–65). 51 polearms were formerly dated to this period but three of them proved to be prehistoric, seven Avar age, 18 winged-spearheads of Carolingian period (9th–10th centuries), eight examples were medieval and six pieces are unreliable entries (Kovács 1972, 96–99).

6 Komárno Shipyard grave No. 130 (Trugly 1993, 207. Abb. 30. Taf. XXXVIII/5); Mezőkovácsháza-Agyagbánya grave No. 5 (Juhász 1973, 104, II. t. 5); Tiszaderzs–Szentimrei út grave No. 19 (Kovrig 1975, 221. fig. 5/4), grave No. 29 (Kovrig 1975, 221–222. fig. 6/35) and grave No. 38 (Kovrig 1975, 222. fig. 7)

other polearms were lost, and therefore these could not be studied.<sup>7</sup> Some data from the published literature was clearly unreliable: some socketed arrowheads were described as spearheads<sup>8</sup> and in some cases Iron Age (La Tène) spearheads were inventoried as Avar-age artefacts.<sup>9</sup> Some unpublished cemeteries containing several graves are only known from excavation reports, hence some spearheads are merely mentioned.<sup>10</sup>

A general classification and chronology of Avar-age polearms has never previously been studied, with only small series (like individual cemeteries) having been examined and therefore their conclusions limited to specific sites.<sup>11</sup> Parts of this study have been published elsewhere in Hungarian.<sup>12</sup>

## 1 Classification of Polearms

As already described, the polearms have been classified based on the form of the blade into four form-groups (P.I: reed-shaped; P.II: conical; P.III: leaf-shaped; P.IV: triangular) (fig. 3) and subdivided into several blade types (figs. 4–7). Variants are distinguished by the ratio of the length of the blade and socket, and finally by the manufacture of the socket (fig. 8). Some spearheads could not be classified by a blade type finer than a form-group, and in these cases they will be mentioned only as part of general categories.

7 18 spearheads were lost during the World War II.

8 As in the case of the 'javelins' of the Mosonszentpéter site (grave No. 1, 3, 4, 5: Sótér 1885, 202) which are actually socketed arrowheads.

9 Some spears mentioned by Szentpéteri appear not to exist, like that from grave No. 6 of Budapest XIV. Tihanyi tér (Nagy 1998, 116. Taf. 91–92). La Tène spearheads dated formerly to Avar Age: Kölesd (Kovrig 1955b, 170).

10 11 examples from Mezőfalva–Vasútállomás (grave No. 20, 23, 27, 66A, 76, 87/100, 115, 122, 134, 136, 200) and 13 pieces from Rácalmás–rózsamajor (grave No. 1, 15, 23, 26, 55, 80, 82, 102, 118, 121, 131, 150, 152) are simply mentioned by Szentpéteri (1993, No. 435 and 545). The unpublished spearheads (33 pieces) from Szekszárd – Tószegi dűlő (No. 168, 176, 179, 188, 195, 232, 252, 336, 345, 358, 505, 512, 521, 533, 619, 645, 1040, 1063, 1083, 1085, 1110, 1112, 1138, 1346, 1460, 1589, 1607, 1760, 1768, 1785, 1786, 1787, 1831, 1842) are only used for statistics of burial rite, and I am indebted to János Ódor for this information.

11 Ilona Kovrig (1955a; Kovrig 1955b) listed only 41 spears; Attila Kiss (1962) used data of 59 early Avar spears, József Szentpéteri (1993) listed 200 Avar-age polearms. The newest catalogue of Avar-age polearms contains 666 spearheads (404 spearheads from Early phase). This means an increase of more than 300%.

12 Csiky 2007, 305–323.

Every alpha-numerical code can be treated as a combination of attributes, simplifying the classification of newly found artefacts. After every code and definition the related catalogue entries will be mentioned, as a list of artefacts, containing its site, grave number, dating and available literature, while in the case of unpublished artefacts the inventory numbers will be used as a reference, except for those unpublished and uninventoried artefacts. Types will be discussed by the description of its attributes, chronological and geographical distribution and characteristic depositional rules. Former discussions of certain types or variants will also be discussed in this chapter.

### 1.1 *Reed-shaped Spearheads (P.1)*

The general characteristic of this form-group is the narrow blade with curved edges, a tip of obtuse angle and rhombic cross section to the blade, with the neck of the artefact emphasised. The transition between the blade and the neck is stepped or shouldered. This form group is generally used during the Avar Age from its very beginning until its end, and it was probably used as a thrusting weapon for frontal attacks. 255 spearheads of the Avar Age belong to this group, 178 among them are dated to the Early phase, 15 to the Middle and 60 to the Late phase. 14 reed-shaped spearheads could not be further classified.<sup>13</sup>

This form-group can be subdivided into several types: P.I.A: reed-shaped blade with connecting chap, P.I.B: simple reed-shaped blade, P.I.C: broad reed-shaped blade with curved edges, P.I.D: reed-shaped blade with broad shoulders, P.I.E: pentagonal blades, P.I.F: narrow reed shaped blades with quadrangular cross section.

#### 1.1.1 Reed-shaped Blade with Connecting Chap (P.I.A)

This type is one of the most studied artefacts of the Early Avar period (map 5, figs. 14–18). The term ‘reed-shaped’ was previously used by József Hampel who called this type ‘*Spiess*’ suggesting its function as a thrusting weapon. Hampel

13 Bočar kod Kikinde (Kovrig 1955a, 36; Kovrig 1955b, 172. Csallány 1956, 89; Dimitriević – Kovačević – Vinski 1962, 13. Abb. 2); Devinska Nová Ves grave No. 131 (Eisner 1952, 43–44. Obr. 20: lost during the World War II), Csákberény–Orondpuszta grave No. 141 (IKM 10632), Csengele–Feketehalom grave No. 93 (Török 1995, 218, 227. Pl. 5/4); Domaháza (Hampel 1902, 301); Gátér–Vasútállomás grave No. 193 (Kada 1906, 193a/ 4. rajz); Mezőkovácsháza–Agyagbánya grave No. 7 (Juhász 1973, 106. IV. t. 1); Nagyharsány–Szarkás-dűlő (Papp 1963, 139); Nagymányok–Töpfner Á. Telke (Wosinsky 1890, 433; Hampel 1905. III. 270–271; Kovrig 1955b, 173) Szekszárd–Bogviszlói út grave No. 335 (Rosner 1999, 46–47. Taf. 23/3); Tatabánya–Bánhida (Kovrig 1955a, 36; Kovrig 1955b, 171); Tolna megye (county) grave ‘A’ (Kiss – Somogyi 1984, 181. 96. tábla 6); Várpalota–Gimnázium grave No. 142 (Erdélyi – Németh 1969, 181).

also drew attention to the faceted socket on the example from Esztergom which was compared with the spearhead of Szentendre because of its grid-patterned rings and connecting chap.<sup>14</sup>

The type was first defined and studied by Dezső Csallány who identified it as the archaeological heritage of the Kutrigurs (Bulgaro-Turkic tribe from Eastern Europe).<sup>15</sup> Ilona Kovrig refuted Csallány's Kutrigur theory and proposed an Inner Asian origin of these artefacts based on their good quality,<sup>16</sup> while István Bóna explained the good preservation of these spearheads with their secondarily burning on a pyre.<sup>17</sup> Ursula Koch interpreted similar weapons in South Germany and Italy as Avar imports,<sup>18</sup> while Uta von Freeden supposed a Byzantine origin of these spearheads.<sup>19</sup> These issues on the origin of this type will be discussed in detail in chapter VI.

The number of reed-shaped spearheads with connecting chap is relatively low: only 21 pieces are known from the Early Avar phase. The length of this type is between 18 and 25 cm in the Carpathian Basin, the blade is narrow (2–3 cm), of rhombic cross section and the edges are curved. There is a sharp shoulder between the blade and the neck where a hexagonal or octagonal connecting chap appears, usually in the form of a step. The length of the blade and socket is usually equal although in some cases the blade can be longer (figs. 14–21).<sup>20</sup> The socket is open and is bounded by a clasp (fig. 8/b),<sup>21</sup> although the western analogies of this type usually have a closed socket.

The distribution of Avar pieces follows the line of the Danube river and is primarily characteristic of Eastern Transdanubia (map 5). The chronology of this type is usually determined by their supposed Inner Asian origin and

14 Hampel emphasised that the spear from Szentendre had ribbed rings on its socket instead of grid-patterned (cross-hatched according to his phrasing). (Hampel 1905, I. 179–182).

15 The starting point of the pyre-theory of Csallány was the Bácsújfalú find, where he supposedly observed signs of melting (Csallány 1953, 133–137). The archaeological context of the find is not clear, because it was found by construction workers, whose observations were refuted by Péter Tomka (2008, 230), although he still considers it an offering.

16 Ilona Kovrig (1955a, 30–37, 40–41) listed 8 reed-shaped spears with connecting chap and grid-patterned rings.

17 Bóna 1971a, 240 (24); Bóna 1980, 47–48. Metallographical examination of this type excludes the possibility of secondary burning (Piaskowski 1974, 122–124).

18 Koch 1968, 89–91

19 von Freeden 1991, 614–627.

20 Esztergom–Nagyhegy (Hampel 1900, 113; Hampel 1905, II. 346; Kovrig 1955a, 36. x. tábla 6), Budakalász–Dunapart grave No. 291.

21 The spearhead from grave No. 396 at Csákberény-Orondpuszta is an exception with its closed socket.

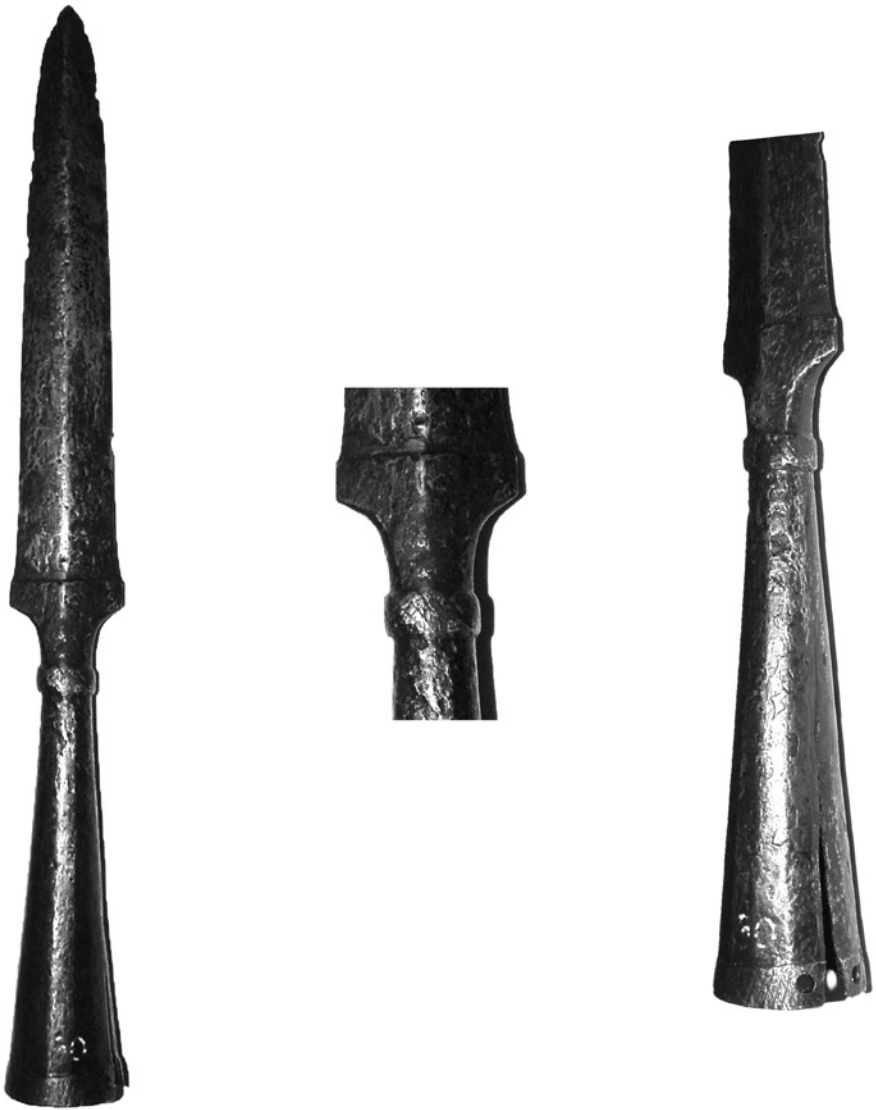


FIGURE 14 *Lanceheads of type P.I.A./1: Esztergom–Nagyhegy (Hampel 1900, 113; Hampel 1905, II. 346; Kovrig 1955a, 36; X. tábla: 6; Kovrig 1955b, 172, V. tábla 5.).*

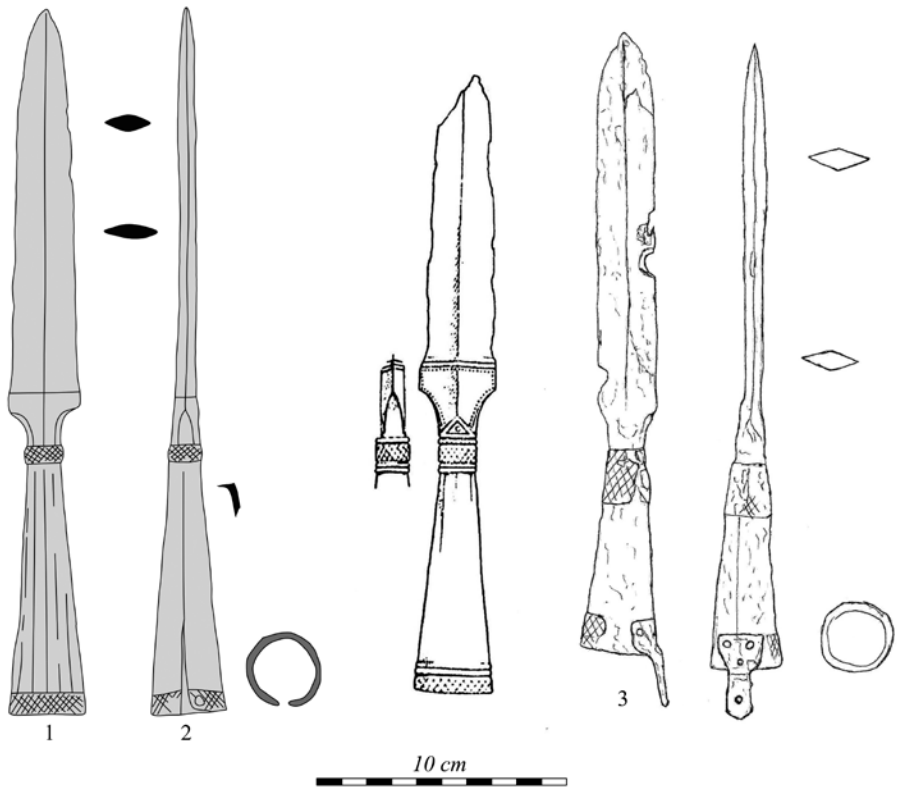


FIGURE 15 Lanceheads of type P.I.A/1: 1. Esztergom–Nagyhegy (Hampel 1900, 113; Hampel 1905, II. 346; Kovrig 1955a, 36; X. tábla: 6; Kovrig 1955b, 172, v. tábla 5.); 2. Szentendre–Pannónia dűlő (Pulszky 1874, 112, Hampel 1905, II. 343345, III. Taf. 263–265; Kovrig 1955b, 170; Bóna 1982–83, 98–104; Garam 1992, 138, 183, Taf. 11, 9.: after Bóna 1982–83); 3. Budakalász–Dunapart grave No. 291.

therefore would belong to the earliest phase of the Avar Age to the second half of the 6th century,<sup>22</sup> although this cannot be used as a chronological indicator if the theory of Uta von Freeden is correct.<sup>23</sup> Such spearheads are usually dated to the end of the 6th and first third of the 7th century in Merovingian cemeteries<sup>24</sup> which could also applied to these Avar examples.

22 Kovrig 1955a, 40; Kovrig 1955b, 190–192.

23 von Freeden 1991, 621–623.

24 4th phase of the Schretzheim cemetery: Koch 1977, 37.

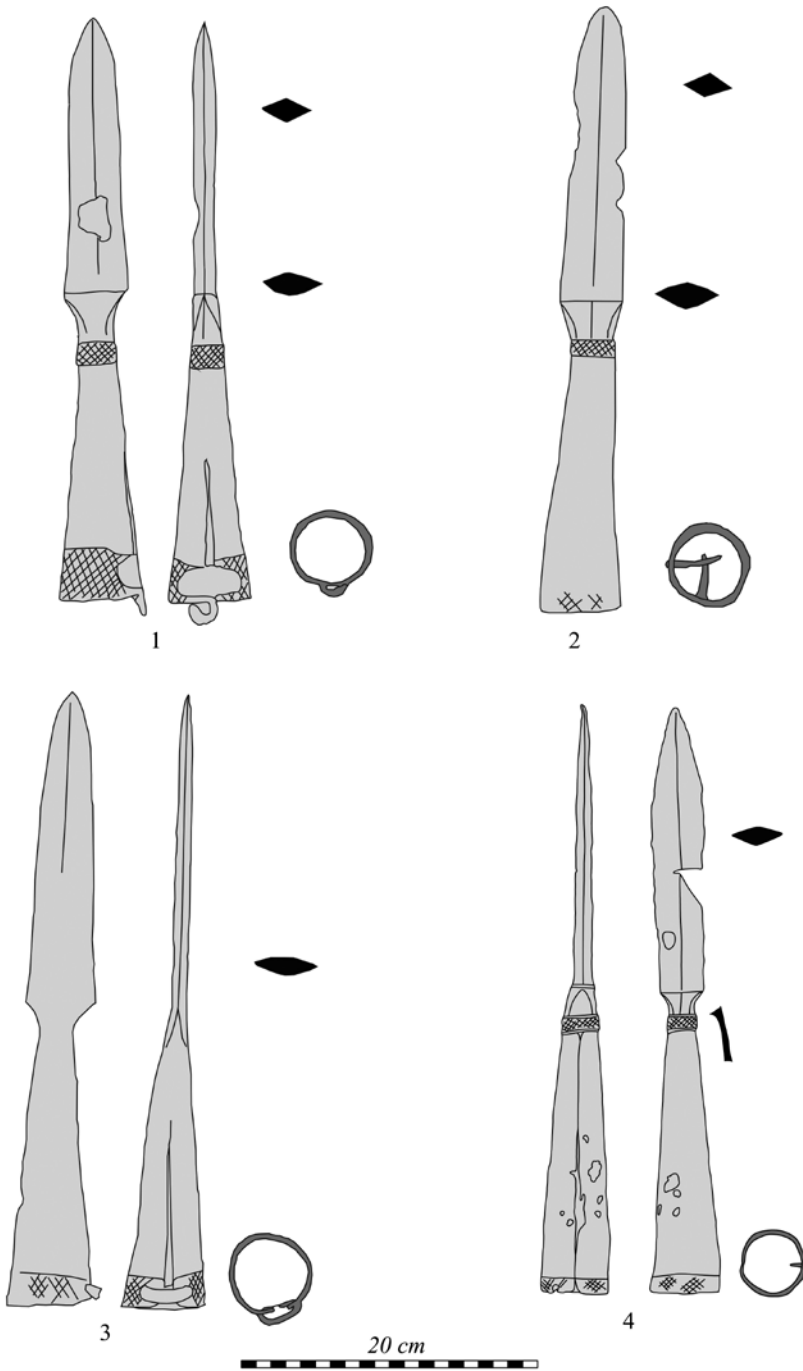


FIGURE 16 Lanceheads of type P.I.A./3; 1. Budakalász–Dunapart, grave No. 715; 2. Budakalász–Dunapart, grave No. 710; 3. Budakalász–Dunapart, grave No. 705; 4. Környe, grave No. 129 (Salamon – Erdélyi 1971, 27, 56, 100, Taf. 22/1, 135, Taf. XVIII/5.).

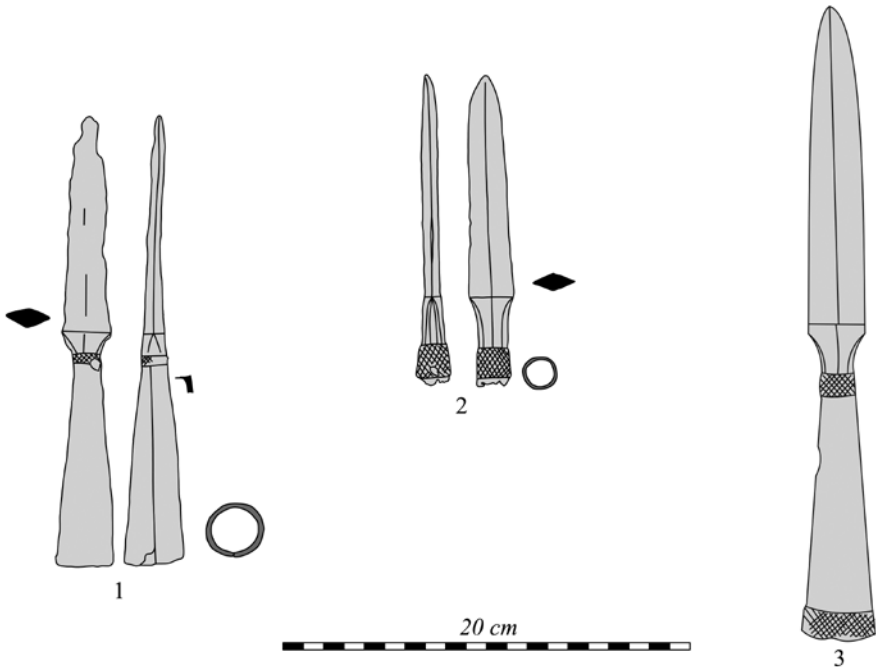


FIGURE 17 *Lanceheads of type P.I.A/3.1. Bugyi-Ürbőpuszta, stray find (NM 17/1935.129); 2. Zámoly, stray find (MNM 61.202.1); 3. Selenča (Bácsújfalú)-Belterület (Csallány 1953, 134, XXXI. tábla 6; Kovrig 1955a, 36, x. tábla 5; Kovrig 1955b, 171, v. tábla 5; Vinski 1958, 13, Tab. V-VI; Dimitrijević - Kovačević - Vinski 1962, 56-57. Tb. XI/3; Mrkobrad 1980, 98., 152., LXXX/3.).*

The only coin-dated example (fig. 15/2) of this type comes from one of the Szentendre burials (grave No. 1 or 2) dated by a tremissis of Justin II (565-578).<sup>25</sup> These lances are often found together with circular stirrups with rectangular loops and trefoil-shaped harness ornaments which do not offer any narrower dating than to the first half of the Early phase.<sup>26</sup>

A variant of this type is characterised by a longer blade than the clasped socket (P.I.A/1.b) and is known only from three examples,<sup>27</sup> all of which have

25 Bóna 1982-3, 100, 103; Garam 1992, 139, 158; Kiss 1996, 233.

26 A variant of trefoil-shaped harness ornaments were still in use in the Middle phase (Müller 1989, Abb. 10/1).

27 Budakalász-Dunapart grave No. 291; Esztergom-Nagyhegy (Hampel 1900, 113; Hampel 1905. II. 346; Kovrig 1955a, 36, x. tábla 6; Kovrig 1955b, 172, v. tábla 5); Szentendre-Pannónia dűlő (Pulszky 1874, 1-12; Hampel 1905. II. 343-345, III. Taf. 263-265; Kovrig 1955b, 170; Bóna 1982-83, 98-104; Garam 1992, 138, 183, Taf. II, 9).



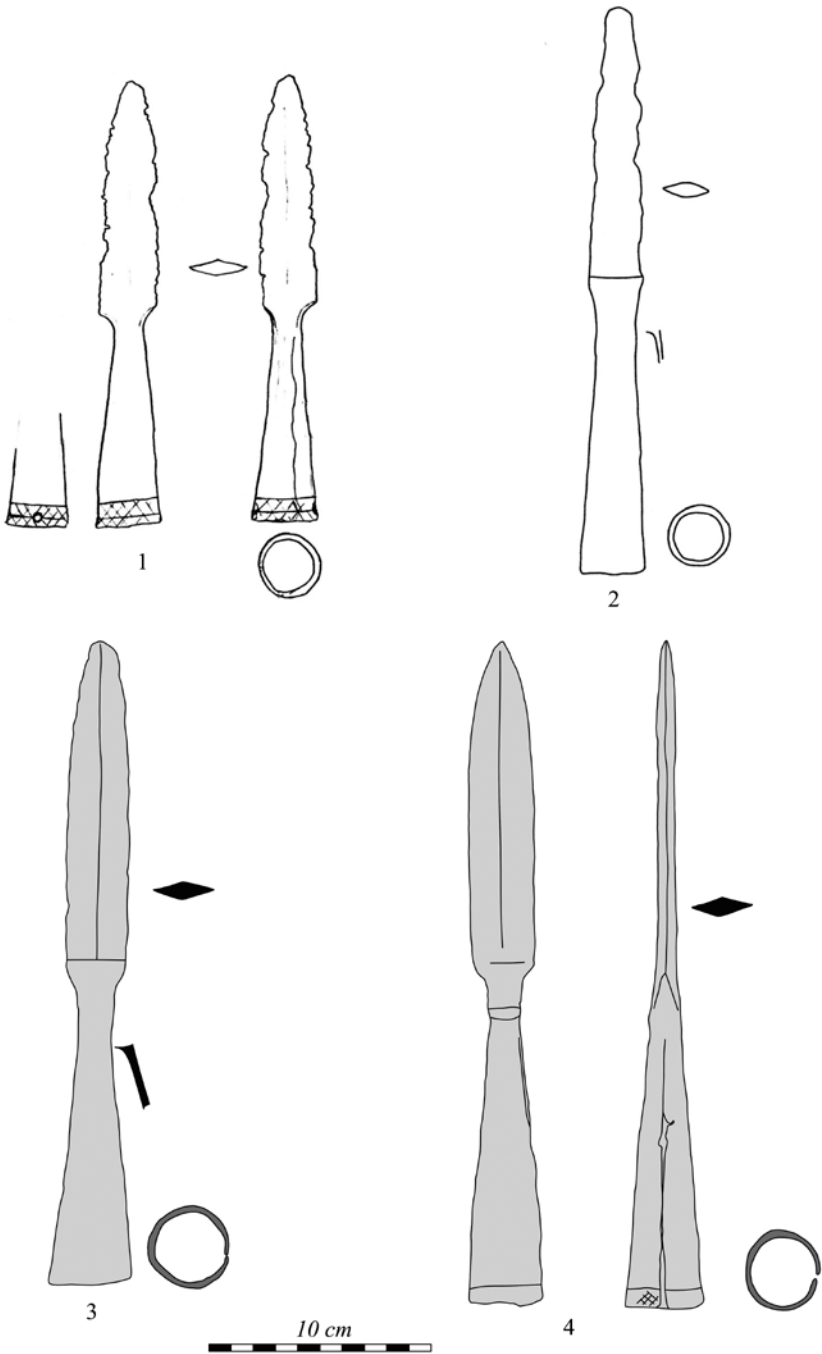


FIGURE 18 Lanceheads of type P.I.A./3: 1. Csákberény–Orondpuszta, grave No. 396 (IKM 11.341); 2. Zmajevac (Csallány 1956, 1064; Garam 1982b, 210, Abb. 15.); 3. Környe, grave No. 90 (Salamon – Erdélyi 1971, 22, Taf. 15/1.); 4. unknown site (MNM 61.182.2).

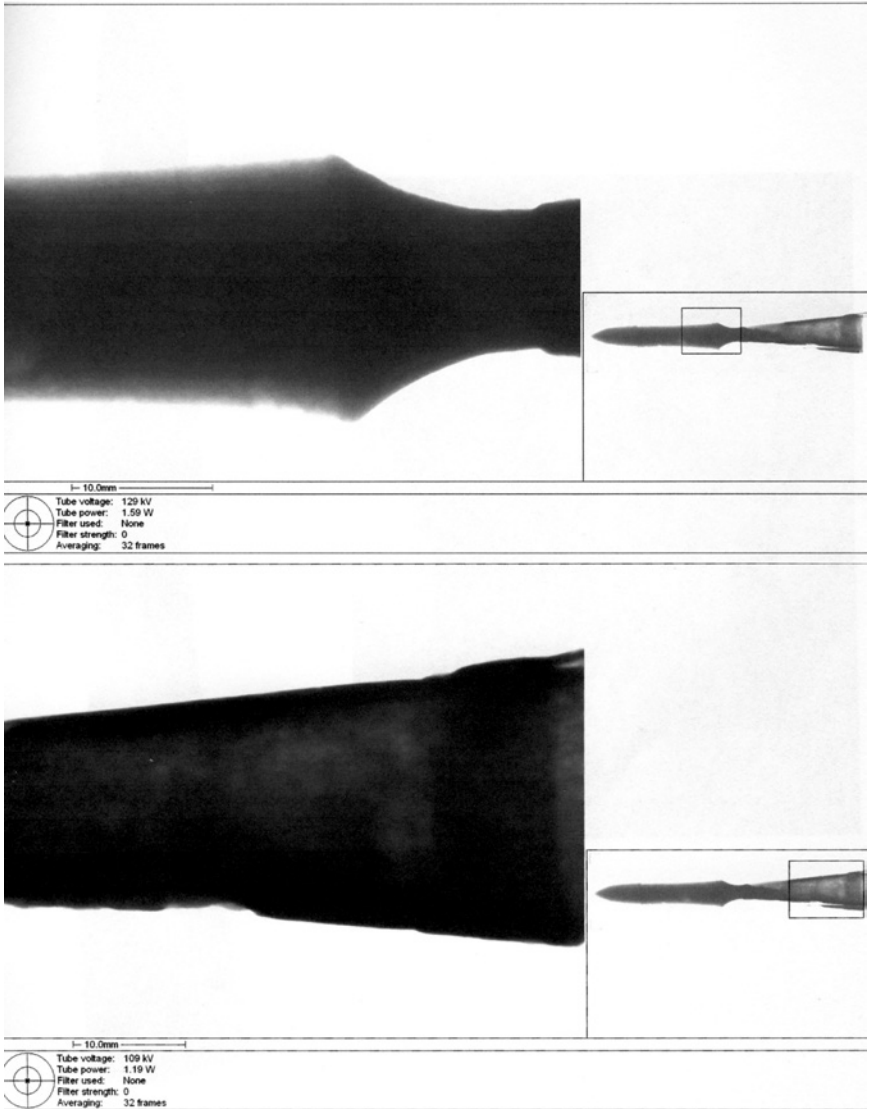


FIGURE 19 X-ray radiograph of the spearhead of Budakalász–Dunapart, grave No. 715.



FIGURE 20 *Macro-photos of the spearhead from Budakalász–Dunapart, grave No. 710.*

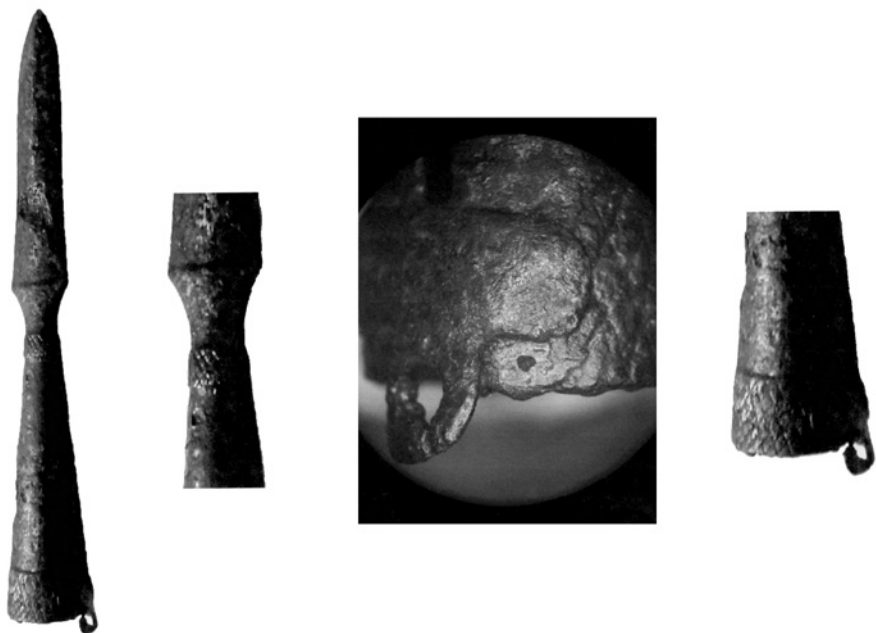


FIGURE 21 *Macro-photos of the spearhead from Budakalász–Dunapart, grave No. 715.*

an elaborated connecting chap of polygonal cross section (fig. 15). The most characteristic piece of this variant is the lance from Esztergom–Nagyhegy (fig. 14), with its faceted socket, elaborated connecting chap of hexagonal cross section, and is extremely well preserved.<sup>28</sup> The faceted socket is an attribute of Italian lances, although this example cannot be classified to the Nocera Umbra type of Ursula Koch because of the lack of grooves on the blade and the grid-patterned rings on the socket.<sup>29</sup> The lance shows similar characteristics (proportion of the artefact, form of the blade, faceted socket) to Koch's Steinheim type.<sup>30</sup> The spearhead from Szentendre–Pannónia dűlő belongs to this variant based on its elaborated connecting chap, although the rings of the socket are ribbed.<sup>31</sup>

The most popular variant of this type is characterised by the equal length of the blade and the clasped socket (P.I.A/3.b, fig. 16–17, map 5). Examples of this variant are smaller and less elaborated than the previous: polygonal connecting chaps and grid-patterned rings on the upper and lower end of the

28 Hampel 1900, 113; Hampel 1905, II. 346; Kovrig 1955a, 36, x. tábla 6.

29 Koch 1968, 90. Liste 20/C. 256.

30 Koch 1968, 90; Freeden 1991, 615. Abb. 15.

31 Bóna 1982–83, 8–104; Garam 1992, 138, 183. Taf. 11, 9.

socket are characteristic. The socket is open and bounded by a clasp. All 15 known examples belong to the first half of the Early phase, their distribution following the line of the Danube, mostly in Eastern Transdanubia (map 5). Recently, similar pieces have become known from Northeastern Bulgaria.<sup>32</sup>

Reed-shaped spearheads with connecting chap and closed socket (P.I.A/3.d) represent a rare variant: only three examples are known from the Early Avar period (fig. 18/2–3).<sup>33</sup> These spearheads are simpler and less elaborated: the connecting chap is mostly present as a smooth step and the grid pattern is simply a graven line on the bottom of the socket. Examples of this variant can be regarded as copies of the first two variants, thus can be dated slightly later.

### 1.1.2 Simple Reed-shaped Blades (P.I.B)

This blade type was the most common during the Avar Age. Most of the reed-shaped spearheads (171 examples, 67.05 per cent of all reed-shaped blades) belong to this group. The majority of such spearheads were used during the Early phase (136 pieces, 79.53%), but the general shape—though in smaller quantities—remained in use during the Middle (11 examples, 6.43%) and Late phase (24 examples, 14.03%) as well.

#### 1.1.2.1 *The Simple Reed-shaped Blade is Longer than the Socket* (P.I.B/1)

This variant is characterised by a long reed-shaped blade and a short (usually closed) socket (map 6, fig. 22). Its broad shouldered sub-variant was known in the first half of the 6th century in the Carpathian Basin from Lombard<sup>34</sup> and Gepidic<sup>35</sup> burials, suggesting that the reed-shaped blade was already known in this region before the arrival of the Avars. This chronology is verified by Merovingian cemeteries and the seriation of Ursula Koch who dated these spearheads to the 5th phase (530–555) of the south German Merovingian chronology.<sup>36</sup>

This type from the Avar Age does not seem to be a closed group due to its uneven chronological and geographical distribution (map 6). Altogether 42

32 Two such pieces are in a private collection in Varna. I only know these pieces thanks to the generous help of Boyan Totev.

33 Budakalász–Dunapart grave No. 281; Csákberény–Orondpuszta grave No. 396 (IKM 11.341); Zmajevac (Vörösmart) (Csallány 1956, 1064; Garam 1982b, 210. Abb. 15).

34 Szentendre Grave No. 49; Máza grave No. 2; Mannersdorf grave No. 2; Oblekovice and Testona (Bóna 1978, 157–158).

35 Hódmezővásárhely–Solt–Palé grave No. 25; Szentes–Kökényzug grave No. 57; Szolnok–Szanda grave No. 8 and 9; Morești grave No. 85 (Bóna 1978, 157–158).

36 Ursula Koch (2001, 62, 75) classified these spearheads as type Y10, characterised by their great length (30–40 cm), long, narrow blade and closed socket.

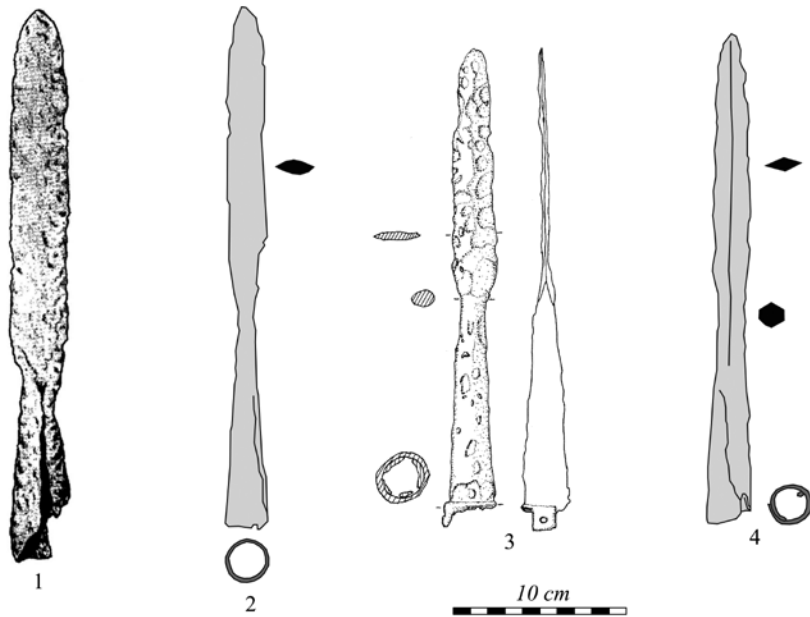


FIGURE 22 *Lanceheads of type P.I.B/1: 1. Prša grave 'B'; 2. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 124 (Eisner 1952, 41–42, Obr. 28/4.); 3. Valalíky–Všechsvätých, grave No. 98/84 (Husár 2005, tab. 1/4a–b); 4. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 416 (Eisner 1952, 95–96, Obr. 47/6.).*

examples belong to this group: 36 pieces being dated to the Early phase,<sup>37</sup> four to the Middle<sup>38</sup> and two examples to the Late phase.<sup>39</sup>

37 Aiud grave No. '111' (Horedt 1956, 396; Horedt 1958, 92. fig. 10/2,5; Cosma et al. 2013, 59, fig. 29.); Budakalász–Dunapart grave No. 468, 689, 1158, 1225, 1483; Budapest III. Szentendrei út (Nagy 1998, 33. II. Taf. 37/14); Lovćenac–Hollinger-ház (Szeghegy) (Roediger 1903b, 272–276; Garam 1992, 144. Taf. 50–51); Nošlac grave No. 6 (Rusu 1962, fig. 4/12); Szegvár – Oromdűlő grave No. 86, 900 and a stray find (unpublished, excavation of Gábor Lőrinczy); Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1999, 48. Taf. 24/15); Târgu Mureș (Marosvásárhely) grave No. 'IX' and 'XIV' (Kovács 1915, 284. 288, 46. kép, and 290–291. 293. 52. kép); Zamárdi–Rétiföldek grave No. 186, 350, 559, 580, 630, 770, 820, 946, 1071, 1091, 1175, 1182, 1263 and 1270 (Bárdos – Garam 2009, 36–37, Taf. 21/36; 56, Taf. 41/3; 82–83, Taf. 72/32; 85, Taf. 75/21; 90, Taf. 80/1; 107, Taf. 96/31; 112, Taf. 99/8; 126, Taf. 110/5; 139, Taf. 120/5; 142, Taf. 123/23; 153, Taf. 133/3; 153–154, Taf. 134/31164, Taf. 142/1; 164, Taf. 142/15).

38 Devínska Nová Ves grave No. 124 and 132 (Eisner 1952, 41–42. Obr. 28/4. and 44, Obr. 20/4); Iváncsa–Szabadság utca 20. (Bóna 1970, 244. 8. kép 20); Lengyeltóti–Pusztaberény grave No. 5 (Bárdos 1978b, 82. 86. 6. kép 2).

39 Tiszafüred–Majoros grave No. 638 (Garam 1995, 82, Taf. 109, 182); Valalíky–Všechsvätých grave No. 98/84 (Husár 2005, tab. 1/4a–b).

A considerable number of the Early examples were found in Transylvania,<sup>40</sup> thus their distribution in the region can be explained by a continuous Gepid population living there, since this type was well known from Gepid cemeteries of the first half of the 6th century. This type is also present in the cemeteries of Budakalász<sup>41</sup> and Szekszárd–Bogyiszlói út<sup>42</sup> which can be related to the Merovingian influences on these sites. Most of the early examples are characterised by a closed socket except for the spearhead from grave No. 689 of Budakalász–Dunapart, the socket-wings of which were simply bent next to each other. The average length of these early examples is 25 cm.

The spearheads of the Middle phase comprise a closed group: their shoulder is rounded, their socket is closed and their average length is around 28–30 cm. The type is attested at Devín's Gate (the north west entrance of the Danube to the Carpathian Basin, fig. 22)<sup>43</sup> and in Transdanubia.<sup>44</sup> The chronology of these spearheads is based on the belt set made of silver foil and accompanying sabre with elongated P-shaped suspension loop from the Iváncsa burial,<sup>45</sup> and the quadrangular belt-mounts with interlace ornaments<sup>46</sup> and the strap-end made of silver foil of geometric ornaments from the grave No. 124 of Devínska Nová Ves.<sup>47</sup>

The examples dated to the Late phase (8th century) can also be regarded as a regional phenomena and not as a closed group. The socket of the spearhead from grave No. 98/84 from Valalíky – Všechnsvätých (fig. 22/3) was closed by a ring with rectangular loop pulled over the socket,<sup>48</sup> which is a regional characteristic of the spearheads of the Košice basin. The socket of the Tiszafüred example is also closed but without the other accompanying features.<sup>49</sup>

40 Aiud grave No. '111' (Horedt 1956, 396; Horedt 1958, 92. fig. 10/2,5; Cosma et al. 2013, 59, fig. 29.); Noşlac grave No. 6 (Rusu 1962, fig. 4/12); Târgu Mureş (Marosvásárhely) grave No. 'IX' and 'XIV' (Kovács 1915, 284. 288, 46. kép, and 290–291. 293. 52. kép).

41 Budakalász–Dunapart grave No. 468, 689, 1158, 1225, 1483.

42 Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1999, 48. Taf. 24/15).

43 Devínska Nová Ves grave No. 124 and 132 (Eisner 1952, 41–42. Obr. 28/4. and 44, Obr. 20/4).

44 Iváncsa–Szabadság utca 20. (Bóna 1970, 244. 8. kép 20); Lengyeltóti–Pusztaberény grave No. 5 (Bárdos 1978b, 82. 86. 6. kép 2).

45 Bóna 1970, 243, 251. 8/5.

46 Bárdos 1978b, 82. 86. 6. kép 2.

47 Eisner 1952, 41–42, Obr. 28/4.

48 Husár 2005, 30. Tab. 1/4a–4b.

49 The spearhead of grave No. 638 of Tiszafüred is dated by rectangular belt-mounts cast of copper alloy ornamented by a griffon (Garam 1995, 82. 232).

The early examples of this type can be assigned to the Merovingian spearheads,<sup>50</sup> while its later representatives differ in their form and chronology, demonstrating that formal attributes are not always suitable for creating closed types with a narrow date range or distribution.

#### 1.1.2.2 *The Blade is Shorter than the Socket (P.I.B/2)*

The blade of this type is reed-shaped, short and of rhombic cross section. The length of the blade is around 10 cm, while the socket is longer than the blade (map 7, figs. 23–24). The type is widely distributed in the Avar Age, with 29 such examples known, and which are evenly distributed across all three phases: eighteen examples are known from the Early phase,<sup>51</sup> four from the Middle<sup>52</sup> and seven from the Late phase,<sup>53</sup> while the chronology of those pieces from Gâmbaş are still under debate.<sup>54</sup>

With the exception of the single Transylvanian example<sup>55</sup> all early pieces were found in Transdanubia (map 7).<sup>56</sup> Most of the early examples are char-

50 Type Y10 (Koch 2001, 62).

51 Aiud grave No. '11' (Horedt 1956, 396; Horedt 1958, 91–92. fig. 10/14; Cosma et al. 2013, 57–58, fig. 28); Budakalász–Dunapart grave No. 200, 728; Cikó grave No. 109 (Wosinsky 1896, 902. CCI. t; Kovrig 1955b, 167; Kiss – Somogyi 1984, 45. 9. tábla 7); Kehida–TSz-major grave No. 2 (Szőke 2002, 77. 8/b); Kölked–Feketekapu A grave No. 324 (Kiss 1996, 91–92. Taf. 68/11); Környe grave No. 124 (Salamon – Erdélyi 1971, 26, Taf. 124/36); Oroszlány I. grave No. 18 (Sós 1958, 111. Abb. 22); Pókaszepetk–Mesterföldek, Avar utca grave No. 82, 242 and 332 (Sós – Salamon 1995, 64–65, 67, 145, Pl. IX/1, Pl. LXXXI/1, 161, Pl. XVIIII/1, Pl. LXXXI/5, 166–167. Pl. xx).

52 Čataj I. Zemanské-Gejzovce grave No. 148 (Szentpéteri 1993, 121); Kölked–Feketekapu B grave No. 541 (Kiss 2001, 164–167, Taf. 90/1); Pécs–Kertváros grave No. 391 (Heinrich – Tamáska 2005, 148, 150. Abb. 1); Pókaszepetk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 64–65, 67, 182, Pl. XXVII/12, LXXXI/6); Vác–Kavicsbánya grave No. 103 (Tettamanti 2000, 24–25. Taf. 3/5).

53 Bóly–Sziebert puszta grave No. 20 (Papp 1962, 174–175. VII. t. 18); Devinska Nová Ves–A Tehel'ňa grave No. 234 (Eisner 1952, 65–66. Obr. 28/2); Kehida–TSz-major grave No. 67 (Szőke 2002, 77. 8/f); Komárno–3. Váradiho u. grave No. 11 and 20 (Čilinská 1982, 349–351. tab. V/22; 354, tab. VII/25); Komárno–8. Shipyard grave No. 63 (Trugly 1987, 262–263. Taf. XIII/10).

54 Gâmbaş grave No. '1', 'IX', 'XVII' (Horedt 1958, 96–97. fig. 14/1, 99. fig. 14/2. 14/13, 100, fig. 14/14).

55 Aiud grave No. '11' (Horedt 1956, 396; Horedt 1958, 91–92. fig. 10/14; Cosma et al. 2013, 57–58, fig. 28.).

56 Budakalász–Dunapart grave No. 200, 728; Cikó grave No. 109 (Wosinsky 1896, 902; CCI. t.; Kovrig 1955b, 167; Kiss – Somogyi 1984, 45. 9. tábla 7); Kehida–TSz-major grave No. 2 (Szőke 2002, 77. 8/b); Kölked–Feketekapu A grave No. 324 (Kiss 1996, 91–92. Taf. 68/11);



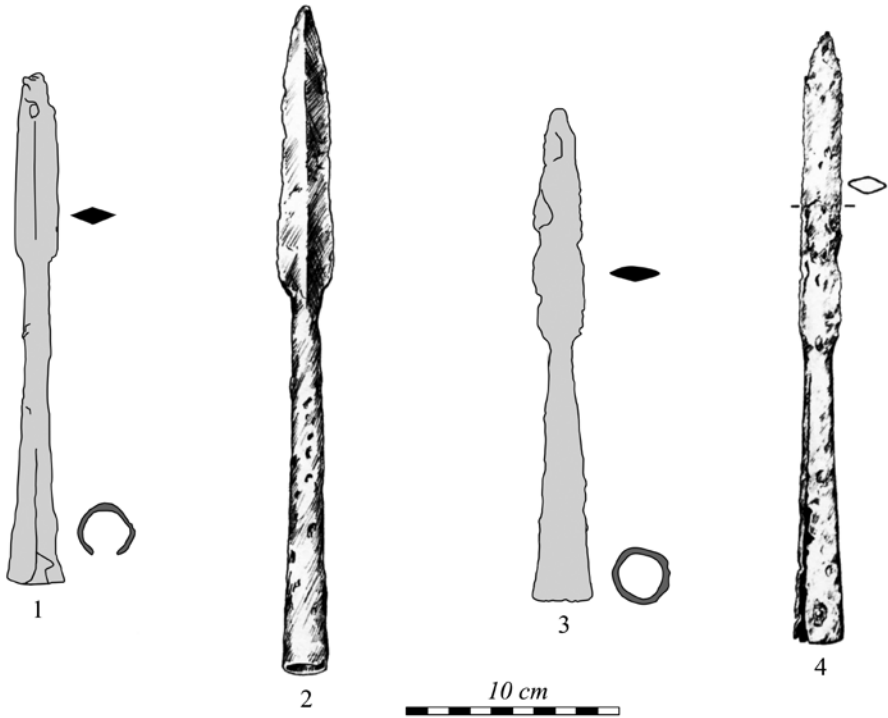


FIGURE 23 Lanceheads of type P.I.B/2: 1. Budakalász–Dunapart, grave No. 200; 2. Pókaszeptek–Mesterföldek, Avar utca, grave No. 82 (Sós – Salamon 1995, 64–65, 67, 145, Fig. IX/1, Fig. LXXXI/1.); 3. Budakalász–Dunapart, grave No. 728, 4. Pókaszeptek–Mesterföldek, Avar utca, grave No. 16 (Sós – Salamon 1995, 64–65, 67, 137, Fig. 21, Fig. 1/50, LXXXI/3.).

acterised by a closed socket,<sup>57</sup> long and narrow neck and a narrow (width: 2 cm) blade. A variant of this type is of particularly good preservation, its socket closed by a ring with pentagonal loop. These spearheads are usually long (aver-

Környe grave No. 124 (Salamon – Erdélyi 1971, 26, Taf. 124/36); Oroszlány I. grave No. 18 (Sós 1958, III. Abb. 22); Pókaszeptek–Mesterföldek, Avar utca grave No. 82, 242 and 332 (Sós – Salamon 1995, 64–65, 67, 145, Pl. IX/1, Pl. LXXXI/1, 161, Pl. XVIII/1, Pl. LXXXI/5, 166–167, Pl. XX).

57 Aiud grave No. '11' (Horedt 1956, 396; Horedt 1958, 91–92. fig. 10/14; Cosma et al. 2013, 57–58, fig. 28); Budakalász–Dunapart grave No. 728; Kehida–TSz-major grave No. 2 (Szóke 2002, 77. 8/b); Kölked–Feketekapu A grave No. 324 (Kiss 1996, 91–92. Taf. 68/11); Környe grave No. 124 (Salamon – Erdélyi 1971, 26, Taf. 124/36); Oroszlány I. grave No. 18 (Sós 1958, III. Abb. 22); Pókaszeptek–Mesterföldek, Avar utca grave No. 82 (Sós – Salamon 1995, 64–65, 67, 145, Pl. IX/1, Pl. LXXXI/1).

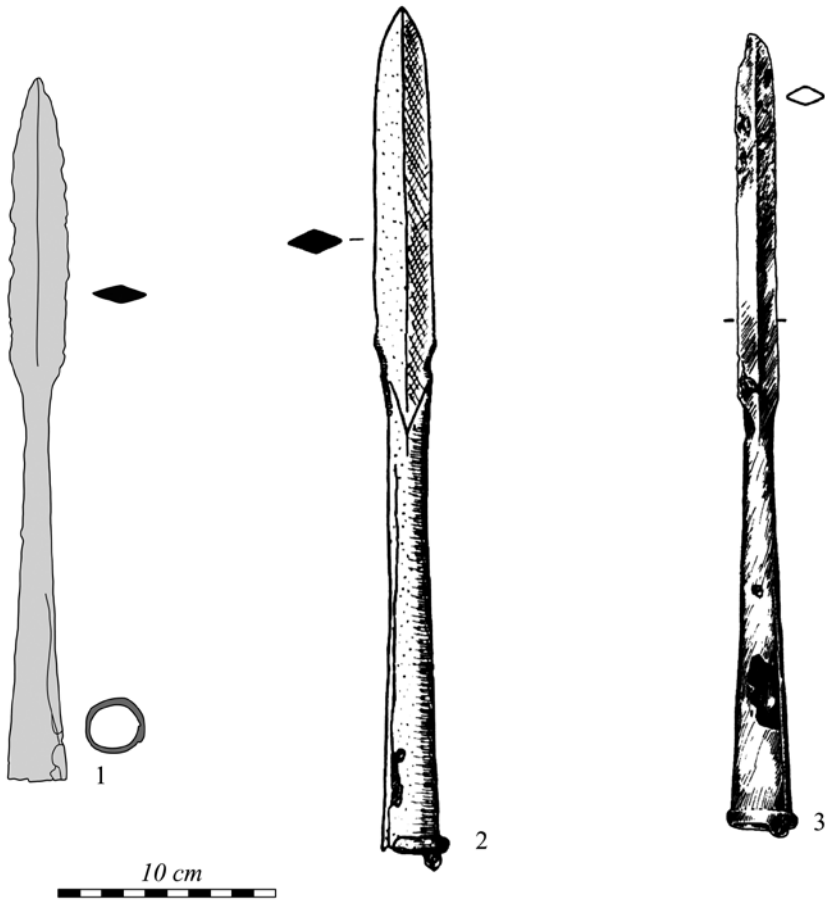


FIGURE 24 Lanceheads of type P.I.B/2: 1. Oroszlány I. grave No. 18 (Sós 1958, 11, *Abb. 22.*); 2. Cikó, grave No. 109 (Wosinsky 1896, 902, *CCI. tábla*; Kovrig 1955b, 167; Kiss – Somogyi 1984, 45, 9. *tábla 7.*); 3. Pókaszeptek–Mesterföldek, Avar utca, grave No. 332 (Sós – Salamon 1995, 166–167, *Fig. xx*).

age length: 30 cm). This variant is only known from Transdanubia (fig. 24/2),<sup>58</sup> and it can be dated to the transition between the Early and Middle phase as verified by the grave goods of burial No. 332 from the Pókaszeptek cemetery (fig. 24/3).<sup>59</sup>

<sup>58</sup> Cikó grave No. 109 (Wosinsky 1896, 902; *CCI. t.*; Kovrig 1955b, 167; Kiss – Somogyi 1984, 45, 9. *tábla 7.*); Pókaszeptek grave No. 332 (Sós – Salamon 1995, 166–167. *Pl. xx*).

<sup>59</sup> Sós – Salamon 1995, 64–65, 67, 167, *Pl. xx/1, Pl. LXXXI/4*. The dating is based on a Byzantine purse-buckle with animals cast of copper alloy from the second third of the 7th century

The examples dated to the Middle phase were mainly distributed in Transdanubia,<sup>60</sup> the only exception being from grave No. 148 of Čataj (Slovakia).<sup>61</sup> The closed socket was still characteristic except for the spearheads of Pécs and Čataj: in both of these cases the socket was closed by a ring pulled over.<sup>62</sup> The chronology of these spearheads is based on the grave goods from the burials, verifying its dating to the second half of the 7th century.<sup>63</sup> The continuity between the examples of this variant from the Early to the Middle phase is conspicuous by their common similarity.

The examples dated to the Late Avar period have different characteristics, a much broader and rounded blade with flat rhombic cross section and closed socket. Its main distribution area lies in Transdanubia<sup>64</sup> and Southwestern Slovakia (map 7).<sup>65</sup> All of these spearheads are dated to the first half of 8th century by their burial context.<sup>66</sup>

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(Uenze 1966, 164–166; Garam 2001, 113), whereas this type is dated to a later period by Igor Gavritukhin (1995, 201–214). The sword with D-shaped suspension loops offers a similar date (Sós – Salamon 1995, Pl. xx/4, by analogy with that from Tárnok: Garam 1991b, 222. 3. kép, 5 kép 2).

- 60 Kölked–Feketekapu B grave No. 541 (Kiss 2001, 164–167, Taf. 90/1); Pécs–Kertváros grave No. 391 (Heinrich–Tamáska 2005, 148, 150. Abb. 1); Pókaszeptk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 64–65, 67, 182. Pl. xxvii/12, lxxx1/6); Vác–Kavicsbánya grave No. 103 (Tettamanti 2000, 24–25, Taf. 3/5).
- 61 Čataj I. Zemanské–Gejzovce grave No. 148 (Szentpéteri 1993, 121).
- 62 Čataj I. Zemanské–Gejzovce grave No. 148 (Szentpéteri 1993, 121); Pécs–Kertváros grave No. 391 (Heinrich–Tamáska 2005, 148, 150. Abb. 1).
- 63 These spearheads are dated to the second half of the 7th century by the Breitsax of grave No. 148 of Čataj (Hanuliak – Zábójník 1982, 498), gold coin-imitation, silver hairgrip and circular belt-mounts with vegetal ornaments made of silver from grave No. 541 of Kölked–Feketekapu ‘B’ (Kiss 2001, 164–167), U-shaped iron belt-mount with inlaid decoration from grave No. 391 of Pécs–Kertváros (Heinrich–Tamáska 2005, 148, 150. Abb. 1); sabre from grave No. 415 of Pókaszeptk (Sós – Salamon 1995, 64–65), and strap ends decorated by interlace ornament from grave No. 103 of Vác–Kavicsbánya (Tettamanti 2000, 24–25).
- 64 Bóly–Sziebert puszta grave No. 20 (Papp 1962, 174–175. vii. t. 18); Kehida–TSz-major grave No. 67 (Szőke 2002, 77. 8/f).
- 65 Devinska Nová Ves–A Tehel’ňa grave No. 234 (Eisner 1952, 65–66, Obr. 28/2); Komárno–3. Váradiho u. grave No. 11 and 20 (Čilinská 1982, 349–351. tab. v/22, 354. tab. vii/25); Komárno–8. Shipyard grave No. 63 (Trugly 1987, 262–263. Taf. xiii/10). These sites are situated on the northern bank of the Danube.
- 66 These artefacts are dated to the first half of the 8th century by the rectangular belt-mounts with ring-pendant and strap-end decorated by griffons cast of copper alloy of grave No. 20 from Bóly (Papp 1962, 174–175. vii–viii. t); gilded cast strap-ends decorated by flowers and a cast human head-shaped rattler from grave No. 11 Komárno–Váradiho (Čilinská 1982, 349–351) and gilded cast bronze phalerae with lyon representation and

1.1.2.3 *The Length of the Reed-shaped Blade and the Socket are Equal*  
(P.I.B/3)

This type is the most prevalent spearhead of the Avar Age, primarily during the Early Avar period. Altogether 99 examples are known (map 8, figs 25–27), most of them from the Early phase (81 pieces, 81.81%), only three examples are dated to the Middle phase (3.03%) and 15 to the Late phase (15.15%). This chronological distribution suggests the predominance of Early Avar spearheads of this type, although with a smaller number of spearheads of the same blade form and proportions still in use in later phases. Variants can be distinguished based on the socket: a. cleft socket (fig. 27/3), b. clasped socket (fig. 25), c. edges bent next to each other (figs. 26/4), d. socket wings abutting (fig. 27/2), e. closed socket (fig. 26/1–3, 5–6), f. socket closed by a ring pulled over (fig. 27/1).

Reed-shaped spearheads with cleft socket (P.I.B/3.a) are only known from nine examples, all of which are dated to the Early Avar period.<sup>67</sup> This variant is characterised by a 2–3 mm wide space between the socket-wings. Almost all examples are dated to the Early phase,<sup>68</sup> except for the spearhead from grave No. 16 at Pókaszeptk.<sup>69</sup> This variant is mostly distributed in Transdanubia,<sup>70</sup>

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rectangular copper alloy mounts from grave No. 63 of Komárno 8. Shipyard (Trugly 1987, 262–263). XII–XIII)

67 Andocs-Újhalastó grave No. 17 (Garam 1973, 134. 6. ábra 40); Biharkeresztes–Lencsésbát (Mesterházy 1987, 222, 6. kép/1–2); Budakalász–Dunapart grave No. 1338; between Csolnok and Dág (Kovrig 1955b, 168, Pl. IV/3–5; MNM 12/1951); Előszállás–Bajcsihegy grave No. 115 (IKM 52.186.1); Pókaszeptk–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 64–65, 67, 137, fig. 21, Pl. I/50, LXXXI/3); Szegvár–Oromdűlő grave No. 86; Szegvár–Oromdűlő grave No. 837; Szekszárd–Bogyiszlói út grave No. 698 (Rosner 1999, 87–88. Taf. 46/3)—Early.

68 These spears are dated to the Early phase by strap-ends stamped of a silver foil and copper alloy pin (GARAM 1973, 134. 6. ábra), ring-pommel sword and sling-looped stirrup from Biharkeresztes (Mesterházy 1987, 222, 6. kép), grey, wheel-turned, pear-shaped pottery vessel from grave No. 1338 of Budakalász (type II.A/di: Vida 1999a, 28) dated to the end of the 6th and first half of the 7th century (Vida 1999a, 107) and the bent copper alloy pin and lead tubes of grave No. 16 of Pókaszeptk (Sós – Salamon 1995, 64–65, 67, 137, fig. 21).

69 Sós–Salamon 1995, 64–65, 67, 137, fig. 21, Pl. I/50, LXXXI/3.

70 Andocs-Újhalastó grave No. 17 (Garam 1973, 134. 6. ábra 40); Budakalász grave No. 1338; between Csolnok and Dág (Kovrig 1955b, 168, Pl. IV/3–5; MNM 12/1951); Előszállás–Bajcsihegy grave No. 115 (IKM 52.186.1); Pókaszeptk grave No. 16. Sós – Salamon 1995, 64–65, 67, 137, fig. 21, Pl. I/50, LXXXI/3); Szekszárd–Bogyiszlói út grave No. 698 (Rosner 1999, 87–88. Taf. 46/3).

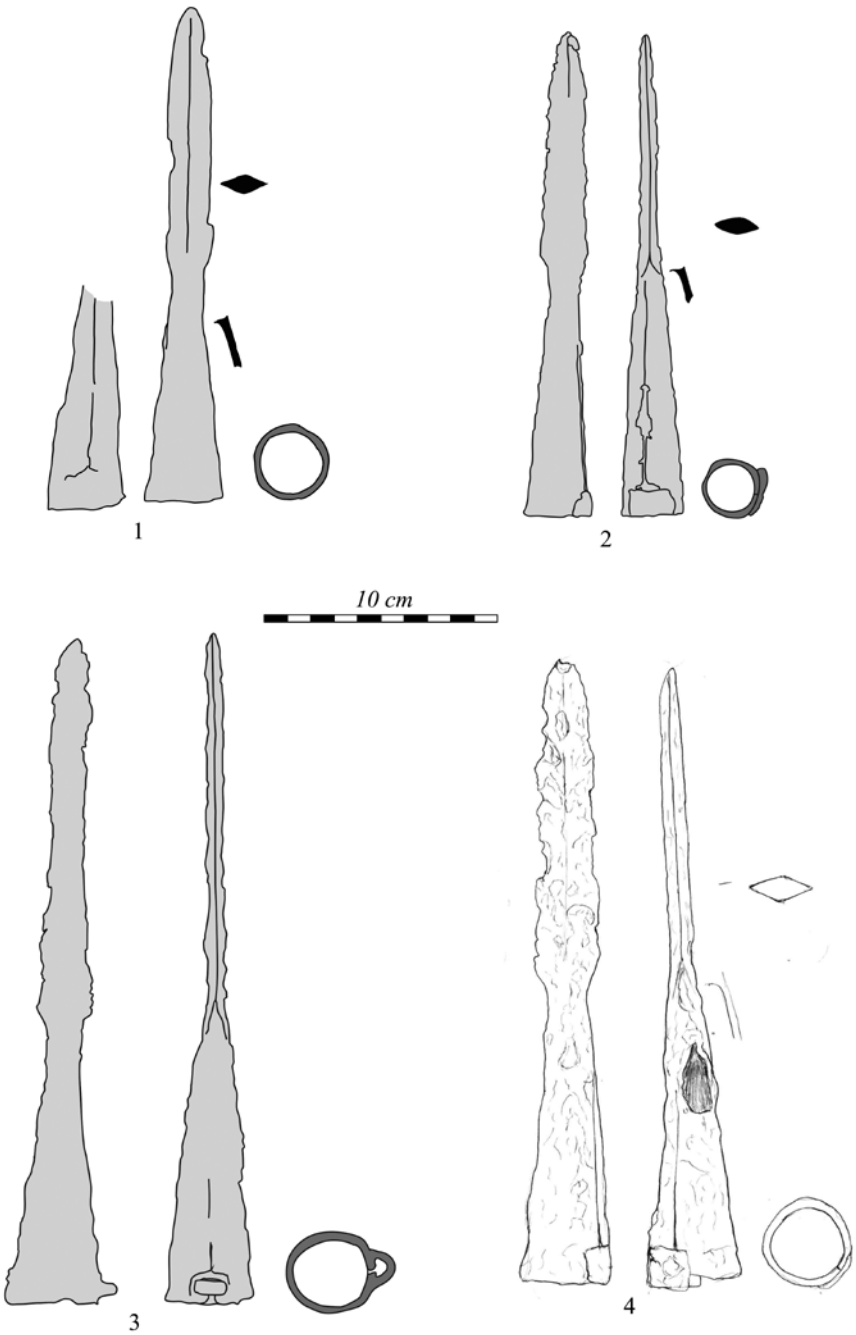


FIGURE 25 Lanceheads of type P.I.B/3: 1. Kölked-Feketekapu A, grave No. 394 (Kiss 1996, 110, Taf. 76/3.); 2. Budakalász-Dunapart, grave No. 1162; 3. Budakalász-Dunapart, grave No. 1155, 4. Budakalász-Dunapart, grave No. 1047.

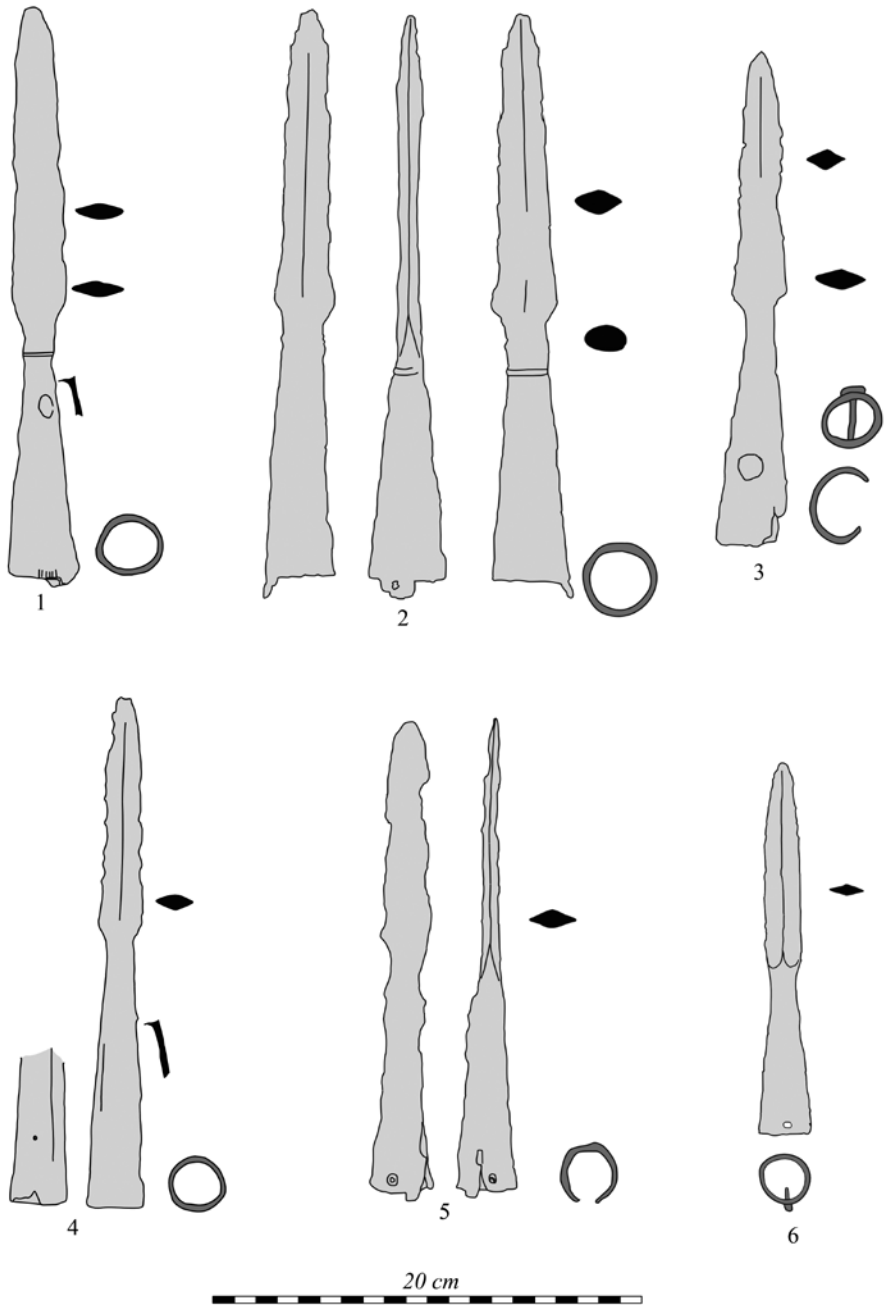


FIGURE 26 Lanceheads of type P.I.B/3: 1. Budakalász–Dunapart, grave No. 1380; 2. Budakalász–Dunapart, grave No. 85; 3. Budakalász–Dunapart, grave No. 993; 4. MNM 55-30.1, 5. Budakalász–Dunapart, grave No. 719, 6. Budakalász–Dunapart, grave No. 1506.

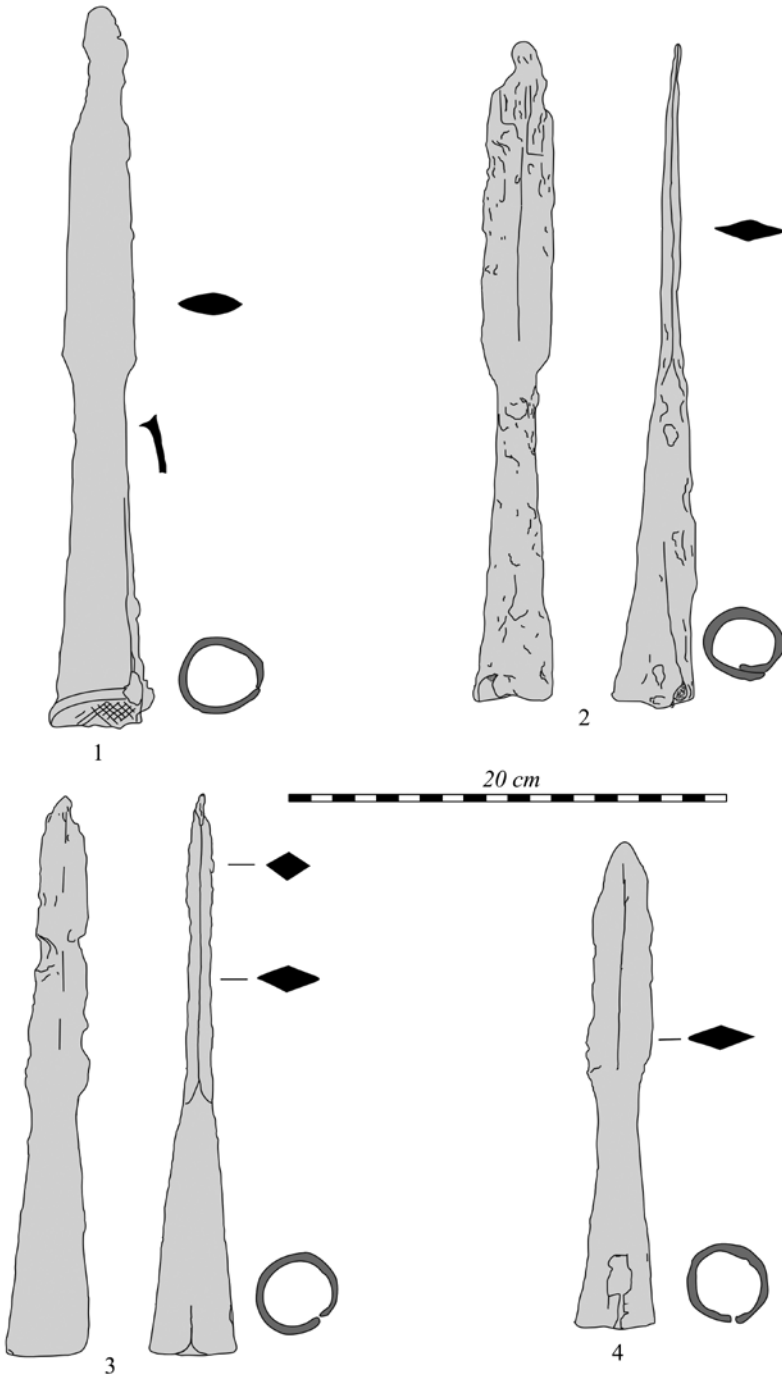


FIGURE 27 Lanceheads of type P.I.B/3: 1. Budakalász–Dunapart, grave No. 930, 2. Budakalász–Dunapart, grave No. 1495; 3. Budakalász–Dunapart, grave No. 55, 4. Budakalász–Dunapart, grave No. 68.

the only exceptions are the spearheads from Biharkeresztes<sup>71</sup> and Szegvár–Oromdűlő (map 8).

Reed-shaped spearheads with clasped socket (P.I.B/3.b) are representatives of a rare variant: the corners of the socket-wings are pierced and linked by a clasp which is also characteristic of type P.I.A/3.b. All of the ten pieces<sup>72</sup> classified as of this variant are dated to the Early phase.<sup>73</sup> Most of the known examples were found in the cemeteries of Budakalász–Dunapart and Csákberény–Orondpuszta (fig. 25). The main distribution area of this variant was situated in Eastern Transdanubia.

The socket-wings of the next variant are bent next to each other (P.I.B/3.c) which is a variant of the closed socket. Eleven spearheads can be classified as of this variant,<sup>74</sup> most of them (eight pieces) being dated to the Early phase (fig. 27/3), and only three to the Late phase. The early examples were found in Transdanubia<sup>75</sup> and are dated by their burial context.<sup>76</sup> The geographical distribution of the late examples are widely dispersed: one piece is known from

71 Mesterházy 1987, 222, 6. kép/1–2.

72 Budakalász–Dunapart grave No. 299, 577, 719, 1047, 1155, 1162 and 1300; Csákberény–Orondpuszta grave No. 147 (IKM 10.635); Csákberény–Orondpuszta grave No. 169; Kölked–Feketekapu A grave No. 394 (Kiss 1996, 110. Taf. 76/3).

73 These artefacts are dated to the Early phase by iron belt-set with inlaid ornaments from grave No. 299 and the trefoil-shaped harness-mounts from grave No. 1047 of Budakalász, the purse-buckle of type Gátér from grave No. 1162 of Budakalász (for the buckles of Gátér type see: Garam 2001, 111) and circular stirrup with rectangular loop from grave No. 1300 of Budakalász.

74 Budakalász–Dunapart grave No. 55 (MTA RI 96.1.43.31) and 551; Devinska Nová Ves–A–Tehel'ňa grave No. 585 (Eisner 1952, 130, t. 74/12); Előszállás–Bajcsihegy grave No. 134 (Kovrig 1955b, 169); Gyarmat–Királydomb (MRT 4. 1972. 112. 25. t. 1–5); Kölked–Feketekapu A grave No. 375 (Kiss 1996, 103–104, Taf. 73/9); Măgina grave No. 1 (Ciugudeanu 1974, 457–459. fig. 1/1); Szegvár–Sápoldal (Bóna 1979, 5. 3. kép 3); Szekszárd–Bogyiszlói út grave No. 598 (Rosner 1999, 76. Taf. 39/2); Szekszárd–Bogyiszlói út grave No. 677 (Rosner 1999, 85. Taf. 45/5); Tiszafüred–Majoros grave No. 1149 (Garam 1995, 135. Abb. 55. Taf. 154. Taf. 190/1).

75 Budakalász grave No. 55 and 551; Előszállás grave No. 134. (Kovrig 1955b, 169); Gyarmat–Királydomb (MRT 4. 1972. 112. 25. t. 1–5); Kölked–Feketekapu A grave No. 375 (Kiss 1996, 103–104, Taf. 73/9); Szekszárd–Bogyiszlói út grave No. 598 and 677 (Rosner 1999, 76. Taf. 39/2. and 85. Taf. 45/5).

76 This chronology is verified by the lamellar armour from grave No. 55 of Budakalász, hemispherical and trefoil-shaped harness-mounts from grave No. 598 (Rosner 1999, 76) and light grey wheel-turned pottery bottle and belt-set stamped from copper-foil from grave No. 677 of Szekszárd–Bogyiszlói út (Rosner 1999, 85).



the Southwestern Slovakia,<sup>77</sup> another from Transylvania,<sup>78</sup> while the third example was found in Eastern Hungary (map 8).<sup>79</sup> These specimens are dated by belt-sets cast of copper alloy<sup>80</sup> and stirrup with quandangular loop and concave sole.<sup>81</sup>

Only one spearhead is known from the variant characterised by the socket wings abutting (P.I.B/3.d), which was found in grave No. 1495 at the Budakalász – Dunapart cemetery (fig. 27/2), which is dated to the Early phase based on a copper alloy rattler and its position in the cemetery.

Reed-shaped spearheads with closed socket (P.I.B/3.e) are a much more frequent variant of this type, of which 46 pieces are known, their popularity most likely due to its simple form and efficiency. Such spearheads are known from all three phases of the Avar Age but most of them (36 pieces) are dated to the Early phase. Only two examples are dated to the Middle<sup>82</sup> and seven to the Late phase.<sup>83</sup>

Most of the early examples of this variant were found in Transdanubia (20 pieces, 58.8%),<sup>84</sup> while six such spearheads are known from Transylvania<sup>85</sup>

77 Devínska Nová Ves grave No. 585 (Eisner 1952, 130, t. 74/12).

78 Măgina (Ciugudeanu 1974, 457–459, fig. 1/1).

79 Tiszafüred grave No. 1149 (Garam 1995, 135, Abb. 55, Taf. 154, Taf. 190/1).

80 The grave No. 585 of Devínska Nová Ves is dated by a cast strap-end with vegetal ornaments and cast shield-shaped mount (Eisner 1952, 130, t. 74), while the grave No. 1149 of Tiszafüred is dated by cast strap-end ornamented by animal-struggle scene (Garam 1995, 135, Abb. 55, Taf. 154).

81 Ciugudeanu 1974, 457–459, fig. 1.

82 Pókaszepetk–Mesterföldék, Avar utca grave No. 67 (Sós – Salamon 1995, 142, Pl. VII); Tiszafüred–Majoros grave No. 937 (Garam 1995, 111, Abb. 43, Taf. 133, Taf. 186/1).

83 Bernolákovo grave No. 59 (Kraskovská 1962, 437–438, tab. XIII/4); Devínska Nová Ves–A–Tehel'ňa grave No. 414 (Eisner 1952, 95, Obr. 55/7); Komárno–3, Váradiho u. grave No. 8 (Čilinská 1982, 349, Tab. 111/29); Komárno–8, Shipyard grave No. 129 (Trugly 1993, 207, Abb. 29, Taf. xxxvi/4); Radvaň nad Dunajom–Žitavská Tõň grave No. 14/1956 (Budinský–Krička 1956, 21–22, Tab. xx/16), Tiszafüred–Majoros grave No. 994 and 1003 (Garam 1995, 117, Abb. 46, Taf. 139, Taf. 137/1, and 118, Abb. 48, Taf. 140, Taf. 187/1).

84 Budakalász grave No. 68, 851, 993, 1156, 1177, 1330, 1380, 1506, Budapest–Csepel (Háros) grave No. 28 (Nagy 1998, 152, Taf. 104/5); Csákberény grave No. 108 (IKM 10.258), Káloz–Nagyhöröcsökpuszta grave No. 2 (Bóna 1971a, 273), Kölked–Feketekapu A grave No. 39 and F (Kiss 1996, 29, 228, Taf. 26/19, and 174, Taf. 105/10) Szekszárd–Bogyiszlói út grave No. 126, 246, 354, 754 (Rosner 1999, 25, Taf. 10/2, 37, Taf. 17/1; 49, Taf. 25/14, 96, Taf. 50/3); Veszprém–Jutas grave No. 121 and 173 (Rhé – Fettich 1931, 26, IV. 11, and 31, IV/30).

85 Aiud grave No. T (Horedt 1956, 396; Horedt 1958, 91, fig. 10/1; Cosma et al. 2013, 56–57, fig. 27), Band grave No. 49, 52, 142, 159 (Kovács 1913, 324, 42. kép; 324–325, 43. kép 15; 345, 67. kép; 355, 77. kép); Proștea Mare (Horedt 1958, 101–102, fig. 17/12).

and 11 from the Great Hungarian Plain (map 8).<sup>86</sup> These spearheads are dated to the Early phase based on the associated grave goods (mainly belt-sets) from the burial assemblages.<sup>87</sup>

The two examples from the Middle phase were found in the cemeteries of Tiszafüred<sup>88</sup> and Pókaszeptk.<sup>89</sup> Both burials are dated by their belt-sets which are characteristic for the period.<sup>90</sup>

The variant was not a common form during the Late phase either, with most of the known examples found in the territory of Slovakia on the Northern shore of the Danube,<sup>91</sup> the only exception being from the Tiszafüred cemetery in Eastern Hungary.<sup>92</sup> These pieces are again dated by belt-sets<sup>93</sup> and decorative

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- 86 Aradac–Mečka grave A and 1 (Nađ 1959, 63. tab. XIII/4. and 68. tab. 1/7), Tiszafüred–Majoros grave No. 112, 186, 207, 210, 212 (Garam 1995, 20–21, Taf. 174, 29–30. Taf. 174/8, 32, Abb. 13, Taf. 175, 32, Taf. 175); Tiszavasvári–Koldusdomb grave No. 1 and 21 (Csallány 1960a, 51–55. XII–XVI. t.; 58–59. XV. t. 2).
- 87 These spearheads are dated by the rosettes stamped of silver foil from grave A of Aradac–Mečka (Nađ 1959, 63. tab. XIII), hemispherical harness-mounts made of silver foil from grave No. 1156 of Budakalász, double-row antler comb from grave No. 1506 of Budakalász, strap-end made of copper alloy foil from grave No. 108 of Csákberény, iron spatha (double-edged sword), Kurzsax (short seax) and antler comb from grave No. 39 of Kölked A-cemetery (Kiss 1996, 29, 228, Taf. 26), tripartite belt-set from grave No. 275 of the same site (Kiss 1996, 80. Taf. 60), light grey wheel-turned pottery vessel from grave No. 394 of Kölked A-cemetery (Kiss 1996, 110. Taf. 76), light grey wheel-turned pottery vessel with stamped decoration and lamellar armour from grave No. 354 of Szekszárd–Bogviszlói út (Rosner 1999, 49. Taf. 25), lamellar armour, silver belt-set and trefoil-shaped silver harness-mounts from Tiszavasvári (Csallány 1960a, 51–55. XII–XVI. t).
- 88 Tiszafüred–Majoros grave No. 937 (Garam 1995, 111, Abb. 43, Taf. 133. Taf. 186/1).
- 89 Pókaszeptk grave No. 67 (Sós – Salamon 1995, 142, Pl. VII).
- 90 This dating is based on the strap-end stamped of copper alloy foil from grave No. 937 of Tiszafüred (Garam 1995, 111, Abb. 43) and narrow U-shaped inlaid iron belt-mounts of grave No. 67 of Pókaszeptk (Sós – Salamon 1995, 142, Pl. VII).
- 91 Komárno 3. Váradiho u. grave No. 8. (Čilinská 1982, 349, Tab. III/29), Komárno 8. Shipyard grave No. 129 (Trugly 1993, 207, Abb. 29, Taf. xxxvi/4); Radvaň nad Dunajom–Žitavská Tňň grave No. 14/1956 (Budinský – Krička 1956, 21–22. Tab. xx/16).
- 92 Tiszafüred–Majoros grave No. 994 and 1003 (Garam 1995, 117, Abb. 46, Taf. 139, Taf. 137/1; 118, Abb. 48, Taf. 140. Taf. 187/1).
- 93 The grave No. 14 of Žitavska Tňň is dated by the rectangular belt-mounts with triangular pinking (ajoure) to the beginning of the 8th century (Budinský – Krička 1956, 21–22. Tab. xx), the grave No. 994 of Tiszafüred is dated similarly by rectangular ribbed strap-end and rectangular belt-mounts with hemispherical rivets (Garam 1995, 117. Abb. 46. Taf. 139). The grave No. 8 from Komárno–Váradiho u. is dated to the first half of the 8th century by its disc-shaped belt mounts and cast strap-ends (Čilinská 1982, 349. Tab. III), while the grave No. 129 from Komárno 8. Shipyard belongs to the second half of the 8th century as

parts of the horse harness<sup>94</sup> showing that this variant remained in use until the second half of the 8th century.

This variant cannot be dated to a shorter period and there is no formal difference between the pieces dated to the various phases, with the main reason for its longevity likely being its simplicity and functionality.

List of variant P.I.B.3.e:

- 1 Aiud grave No. 'I' (Horedt 1956, 396; Horedt 1958, 91, fig. 10/1)—Early
- 2 Aradac–Mečka grave 'A' (Nađ 1959, 63, tab. XIII/4)—Early
- 3 Aradac–Mečka grave No. 1 (Nađ 1959, 55, 68, tab. 1/7; Mrkobrad 1980, 98, 152, LXXX/5, 6, 14)—Early
- 4 Band (Mezőbánd) grave No. 49 (Kovács 1913, 324, 42. kép)—Early
- 5 Band (Mezőbánd) grave No. 52 (Kovács 1913, 324–325, 43. kép 15)—Early
- 6 Band (Mezőbánd) grave No. 142 (Kovács 1913, 345, 67. kép)—Early
- 7 Band (Mezőbánd) grave No. 159 (Kovács 1913, 355, 77. kép)—Early
- 8 Bernolákovo grave No. 59 (Kraskovská 1962, 437–438, tab. XIII/4)—Late ?
- 9 Bratislava–Devínska Nová Ves–A –Tehel'ňa grave No. 414 (Eisner 1952, 95, Obr. 55/7)—Late ?
- 10 Budakalász–Dunapart grave No. 68 (MTA RI 97.1.9.1)—Early
- 11 Budakalász–Dunapart grave No. 851—Early
- 12 Budakalász–Dunapart grave No. 993—Early
- 13 Budakalász–Dunapart grave No. 1156—Early
- 14 Budakalász–Dunapart grave No. 1177—Early
- 15 Budakalász–Dunapart grave No. 1330—Early
- 16 Budakalász–Dunapart grave No. 1380—Early
- 17 Budakalász–Dunapart grave No. 1506—Early
- 18 Budapest XXI. Csepel–Háros grave No. 28 (Nagy 1998, 152, Taf. 104/5)—Early
- 19 Csákberény–Orondpuszta grave No. 108 (IKM 10.258)—Early
- 20 Káloz–Nagyhörcsökpuszta grave No. 2 (Fitz 1960, 67; Bóna 1971a, 273)—Early

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demonstrated by its shield-shaped cast mounts and cast strap-end composed of two pieces decorated by vegetal ornaments (Trugly 1993, 207, Abb. 30. Taf. XXXVIII).

94 The chronology of these artefacts is based on the hat-shaped phalerae (part of the horse-harness) from grave No. 8 of Komárno–Váradiho u. (Čilinská 1982, 349, Tab. 111), the grave No. 14 of Žitavska Tůň is similarly dated by its hat-shaped phalerae (Budinský-Krička 1956, 21–22, Tab. xx) and the gilded copper alloy plume (part of the horse-harness) of grave No. 129 of Komárno–Shipyard (Trugly 1993, 207, Abb. 29, Taf. xxxvi).

- 21 Kiszombor O grave No. 5 (Csallány 1939, 126. 4. kép 12)—Early
- 22 Komárno–3. Váradiho u. grave No. 8 (Čilinská 1982, 349. Tab. III/29)—Late
- 23 Komárno–8. Shipyard grave No. 129 (Trugly 1993, 207. Abb. 29., Taf. xxxvi/4)—Late
- 24 Kölked–Feketekapu A grave No. 39 (Kiss 1996, 29, 228, Taf. 26/19)—Early
- 25 Kölked–Feketekapu A grave ‘F’ (Kiss 1996, 174. Taf. 105/10)—Early
- 26 Pókaszepetk–Mesterföldek, Avar utca grave No. 67 (Sós – Salamon 1995, 142, Pl. vii)—Middle
- 27 Proștea Mare (Horedt 1958, 101–102., fig. 17/12)—Early ?
- 28 Radvaň nad Dunajom – Žitavská Tůň grave No. 14/1956 (Budinský-Krička 1956, 21–22., Tab. xx/16)—Late
- 29 Szekszárd–Bogyiszlói út grave No. 126 (Rosner 1975–76, I. t. 7; Rosner 1999, 25., Taf. 10/2)—Early
- 30 Szekszárd–Bogyiszlói út grave No. 246 (Rosner 1999, 37., Taf. 17/1)—Early
- 31 Szekszárd–Bogyiszlói út grave No. 354 (Rosner 1999, 49., Taf. 25/14)—Early
- 32 Szekszárd–Bogyiszlói út grave No. 754 (Rosner 1975–76, x. t. 11; Rosner 1999, 96., Taf. 50/3)—Early
- 33 Tiszafüred–Majoros grave No. 112 (Garam 1995, 20–21, Taf. 174)—Early
- 34 Tiszafüred–Majoros grave No. 186 Garam 1995, 29–30. Taf. 174/8)—Early
- 35 Tiszafüred–Majoros grave No. 207 (Garam 1995, 32, Abb. 13, Taf. 175)—Early
- 36 Tiszafüred–Majoros grave No. 210 (Garam 1995, 32, Taf. 175)—Early
- 37 Tiszafüred–Majoros grave No. 212 (Garam 1995, 32, Taf. 175)—Early
- 38 Tiszafüred–Majoros grave No. 231 Garam 1995, 36, Taf. 176)—Early
- 39 Tiszafüred–Majoros grave No. 721 (Garam 1995, 91, Abb. 36. Taf. 115., Taf. 183/1)
- 40 Tiszafüred–Majoros grave No. 937 (Garam 1995, 111, Abb. 43. Taf. 133., Taf. 186/1)—Middle
- 41 Tiszafüred–Majoros grave No. 950 (Garam 1995, 112, Taf. 134. Taf. 186)
- 42 Tiszafüred–Majoros grave No. 994 (Garam 1995, 117. Abb. 46. Taf. 139., Taf. 137/1)—Late
- 43 Tiszafüred–Majoros grave No. 1003 (Garam 1995, 118. Abb. 48. Taf. 140. Taf. 187/1)—Late
- 44 Tiszavasvári–Koldusdomb grave No. 1 (Csallány 1960a, 51–55. XI–XVI. t)—Early
- 45 Tiszavasvári–Koldusdomb grave No. 21 (Csallány 1960a, 58–59. XV. t. 2)—Early

- 46 Veszprém–Jutas grave No. 121 (Rhé – Fettich 1931, 26. IV. 11; Kovrig 1955b, 169)—Early
- 47 Veszprém–Jutas grave No. 173 (Rhé – Fettich 1931, 31. IV/30)—Early

The socket of a special variant of reed-shaped spearhead is closed by a ring pulled over it (P.I.B/3.f). Only five spearheads belong to this variant,<sup>95</sup> and the only datable burial is found in Žitavská Tůň which is dated to the Late phase based on its cast belt-set and harness mounts.<sup>96</sup> Grave No. 7 of Virt is dated to the Early phase by its horse bit with antler psalia,<sup>97</sup> but their dating to the 8th century is more probable for the rest.

### 1.1.3 Broad Reed-shaped with Curved Edges (P.I.C)

Five examples belong to this type, all dated to the Early phase (map 9, fig. 28).<sup>98</sup> The blade is relatively broad (2.5–3 cm), its edges are curved, its cross section is flat rhombic, its shape is similar to a sugar-cone, its neck is very narrow, and the socket is also narrow. Most of the examples are from Budakalász (fig. 28),<sup>99</sup> the only exception being the spearhead from Dávod.<sup>100</sup> The type is dated by the stamped hemispherical harness mounts of grave No. 84 of Budakalász.

### 1.1.4 Reed-shaped Blade with Broad Shoulder (P.I.D/1)

Only six spearheads belong to this transitional type which has similar attributes to the triangular spearheads: broad shoulder, tapered blade of flat rhombic or lens-shaped cross section, and the blade being longer than the socket (map 10, fig. 29.).

95 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 781 (Eisner 1952, 164, t. 110/5); Kehida–TSz-major grave No. 22 (Szólke 2002, 77. 8/c); Radvaň nad Dunajom–Virt grave No. 7 (Točík 1992, 27. Obr. 35/27); Radvaň nad Dunajom–Žitavská Tůň grave No. 10/1956 (Budinský – Krička 1956, 16–20. Tab. XIX/21); Tiszaderzs–Szentimrei út grave No. 92 (Kovrig 1975, 223. fig. 10/2).

96 Grave No. 10 of Žitavska Tůň is dated to the second half of Late phase by gilded shield-shaped belt-mounts cast of copper alloy, the iron phalerae with copper alloy button, the harness-mounts with scale-ornament cast of copper alloy. (Budinský–Krička 1956, 16–20. Tab. XIX).

97 Točík 1992, 27. Obr. 35.

98 Budakalász–Dunapart grave No. 529, 832, 1077, 1235; Dávod–Rétaljai szőlők, Vágner A. szőlője, stray find (Gubitz 1908, 419–420, 8. kép).

99 Budakalász–Dunapart grave No. 529, 832, 1077, 1235.

100 Gubitz 1908, 419–420; 8. kép.

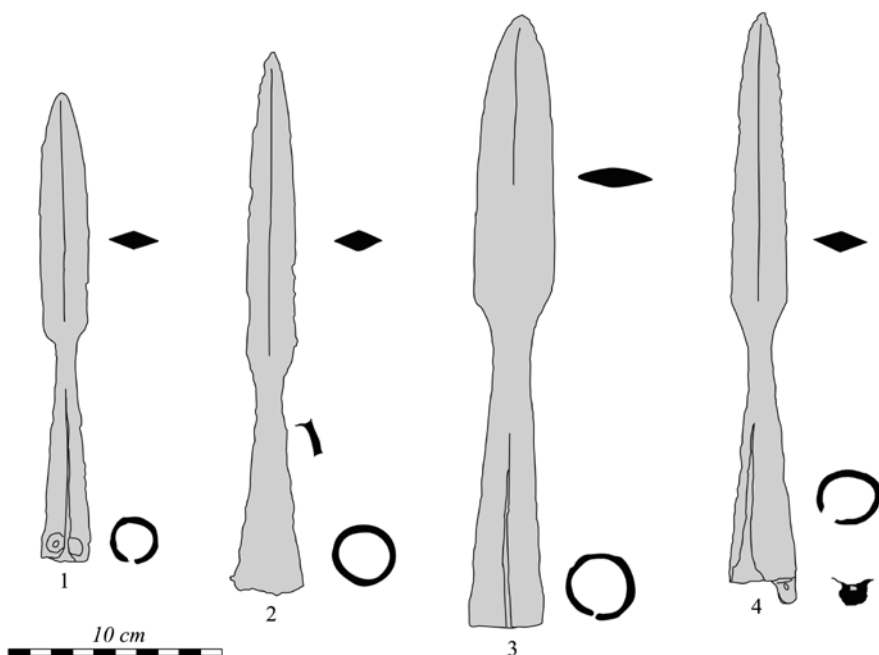


FIGURE 28 *Lanceheads of type P.I.C.: 1. Budakalász–Dunapart, grave No. 1235; 2. Budakalász–Dunapart, grave No. 1077; 3. Budakalász–Dunapart, grave No. 832; 4. Budakalász–Dunapart, grave No. 529.*

The type is only known from Late Avar cemeteries, mainly from the northern periphery of the Avar Qaganate.<sup>101</sup> Their dating is based on horizontal stratigraphic examination of cemeteries from the Košice Basin.<sup>102</sup> Although all of the spearheads of this type belong to the Late phase, the spearhead of Devínska Nová Ves (fig. 29/1) was dated originally to the Early phase based on its attribution to a burial offering. The sacrificial character of this artefact is of some debate, as it came to light as a stray find. Its closest analogy was found in the grave No. 374 of Košice–Šebastovce (fig. 29/4) which is securely dated to the 8th century.<sup>103</sup>

101 Devínska Nová Ves grave No. 107 and stray find (Eisner 1952, 36, Obr. 28/5, t. 108/11), Košice–Šebastovce grave No. 226 and 374 (Budinský-Krička – Točík 1991, 48, Taf. xxx/8, 72, Taf. XLVIII/2) and Valalíky–Všechsvätých grave No. 22 (Pástor 1961, 377–378, 361, Obr. 152/1).

102 For the late dating of the cemeteries near Košice (Zábojník 1995, 241).

103 Budinský-Krička – Točík 1991, 72; Taf. XLVIII/2.

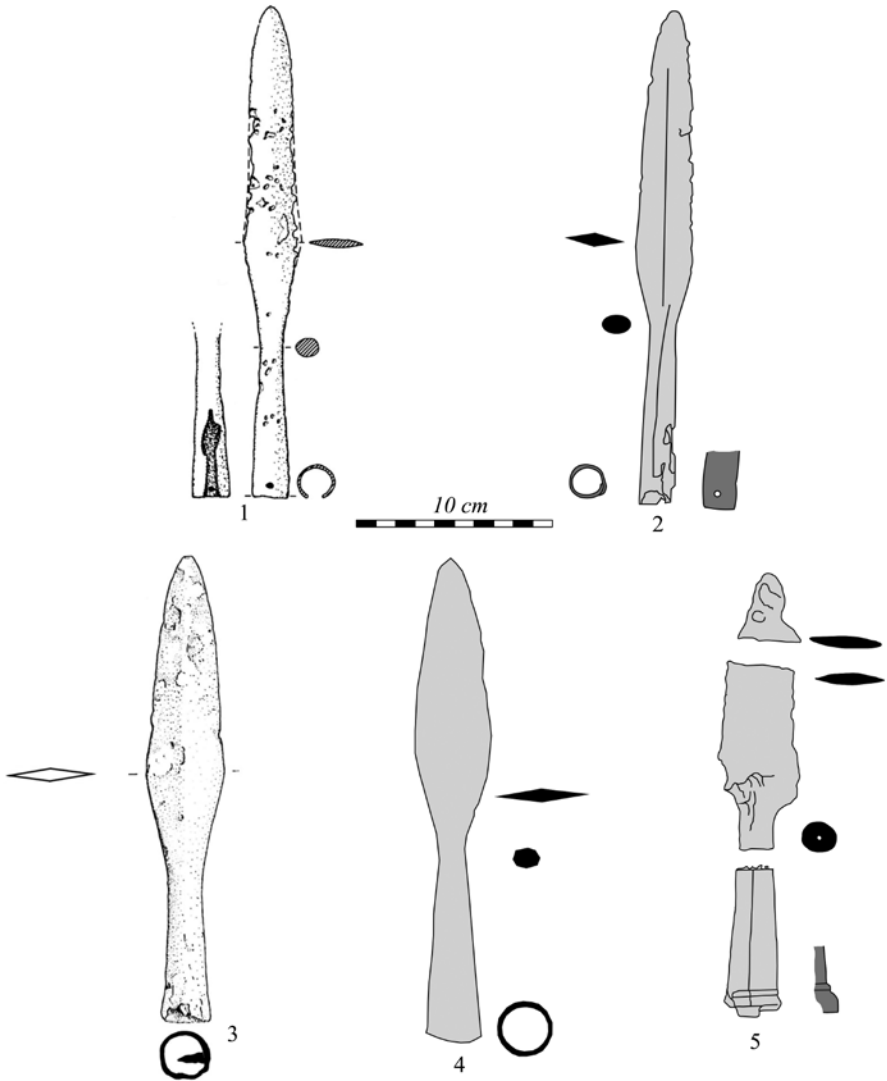


FIGURE 29 Lanceheads of type P.I.D.: 1: Bratislava-Devínska Nová Ves, stray find (drawing of M. Husár); 2: Košice-Šebastovce, grave No. 226 (Budinský-Krička – Točík 1991, 48, Taf. xxx/8.); 3: Bratislava-Devínska Nová Ves-A –Tehelňa, stray find (Eisner 1952, t. 108/11.) (drawing of M. Husár); 4: Košice-Šebastovce, grave No. 374 (Budinský-Krička – Točík 1991, 72, Taf. XLVIII/2.); 5: Košice-Šebastovce, grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. xxvii–xxix.).

### 1.1.5 Pentagonal Blade (P.I.E)

The blade is pentagonal in shape, its cross section is rhombic, the edges are parallel and the tip is angular or rounded (map 11, fig. 30).<sup>104</sup> Only seven such spearheads are known from the Middle<sup>105</sup> and Late phase.<sup>106</sup>

Three variants of this type are known based on the proportion of the blade and socket and the form of the socket:

1. The blade is shorter than the socket (P.I.E/2): Short spearhead with pentagonal blade, the average length of which is 20 cm. The only find of this variant is dated to the Late phase (fig. 30/3).<sup>107</sup>
2. The length of the blade and socket is equal (P.I.E/3): Five spearheads belong to this sub-type, three of which are dated to the Middle phase. The main characteristic of this variant being that its tip was whetted to be triangular, as in the case of the spearhead from grave No. 565 of Devínská Nová Ves, the tip of which has a quadrangular cross section.<sup>108</sup> Its exact analogy was found in grave 545B from Zalakomár–Lesvári dúlő (fig. 30/5), which is dated to the Middle phase,<sup>109</sup> suggesting the early date of the spearhead from Devínska Novás Ves. However, both spearheads from Žitavská Tň are dated to the Late phase.<sup>110</sup>

104 Bernolákovo–Sakoň grave No. 23 (Kraskovská 1962, 430. tab. v/6); Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 565 (Eisner 1952, 127, t. 73/5); Košice–Šebastovce grave No. 293 (Budinský–Krička – Točík 1991, 61, Taf. XLII/5); Radvaň nad Dunajom–Žitavská Tň grave No. 26/1956 (Budinský – Krička 1956, 27–28. Tab. XXIV/11); Radvaň nad Dunajom–Žitavská Tň grave No. 1 (Čilinská 1963, 88. tab. 11/29); Regöly–Kupavár grave No. 18 (Kiss – Somogyi 1984, 130. 58. tábla 18); Zalakomár–Lesvári-dúlő grave No. 545A (Szőke 2002, 77. 8/e).

105 Regöly–Kupavár grave No. 18 (Kiss – Somogyi 1984, 130. 58. tábla 18); Zalakomár–Lesvári-dúlő grave No. 545A (Szőke 2002, 77. 8/e).

106 The spearheads from Žitavská Tň are dated to the first half of Late phase (Budinský–Krička 1956, 27–28. Tab. XXIV; Čilinská 1963, 88. tab. 11), while the example from grave No. 293 from Košice–Šebastovce is dated to the second half of the 8th century. (Budinský–Krička – Točík 1991, 61, Taf. XLII).

107 Bernolákovo–Sakoň grave No. 23 (Kraskovská 1962, 430. tab. v/6).

108 Eisner 1952, 127, t. 73/5.

109 The spearhead is dated to the second half of the 7th century by the long U-shaped iron belt-mounts with inlay-decoration (Szőke 2002, 77. 8/e).

110 The grave No. 10/1956 is dated by its belt-set composed of mounts cast of copper alloy with vegetal ornaments (Budinský–Krička 1956, 16–20. Tab. XIX) and the grave No. 10/1963 is dated by its phalerae made of copper alloy sheet (Čilinská 1963, 88. tab. 11).



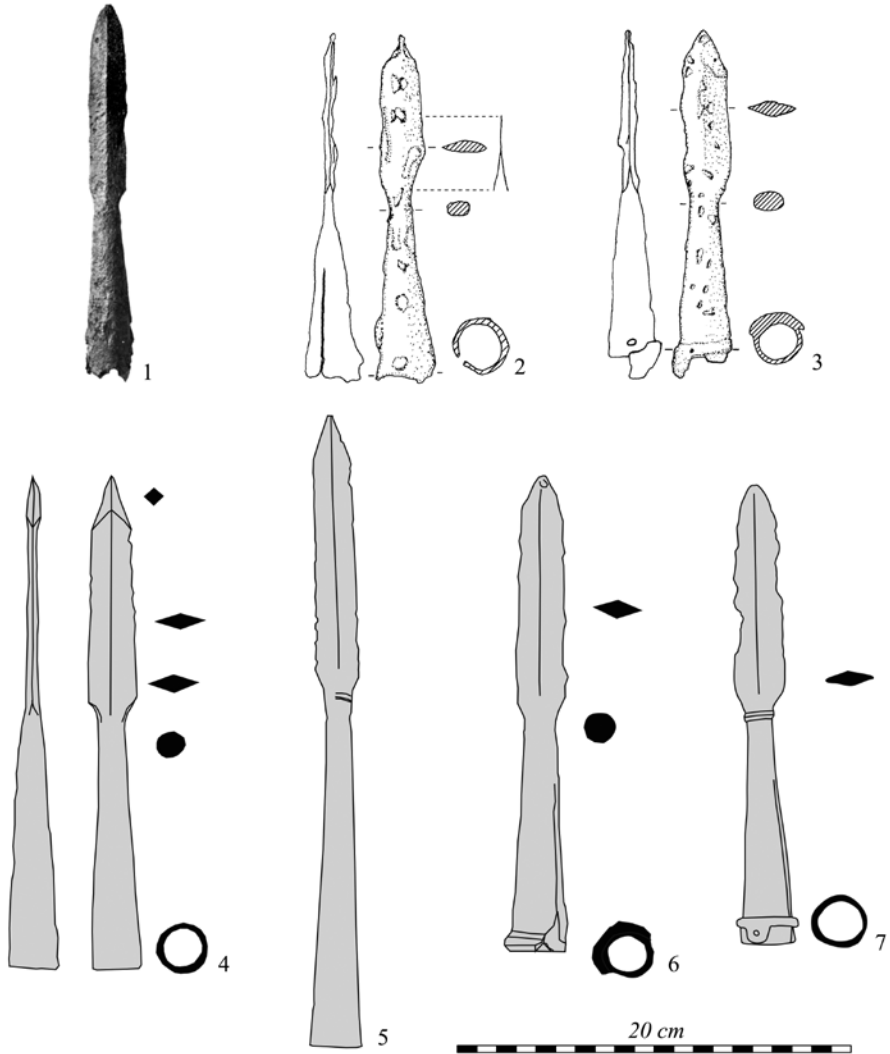


FIGURE 30 Lanceheads of type P.I.E.: 1. Radvaň nad Dunajom–Žitavská Tôň, grave No. 26/1956 (Budinský-Krička 1956, 27–28, Tab. XXIV/11.); 2. Radvaň nad Dunajom–Žitavská Tôň, grave No. 1/1963 (Čilinská 1963, 88, tab. 11/29.) (drawing of M. Husár); 3. Bernolákovo–Sakoň grave No. 23 (Kraskovská 1962, 430, tab. v/6.) (drawing of M. Husár); 4. Bratislava–Devínska Nová Ves–A Tehelňa, grave No. 565 (Eisner 1952, 127, t. 73/5.) (drawing of M. Husár); 5. Zalakomár–Lesvári-dúló, grave No. 545A (Szőke 2002, 77, 8/e.); 6. Bratislava–Devínska Nová Ves–A Tehelňa, grave No. 781 (Kovrig 1955b, 168; Eisner 1952, 164, t. 110/5.); 7. Košice–Šebastovce, grave No. 293 (Budinský-Krička – Točík 1991, 61, Taf. XLII/5.).

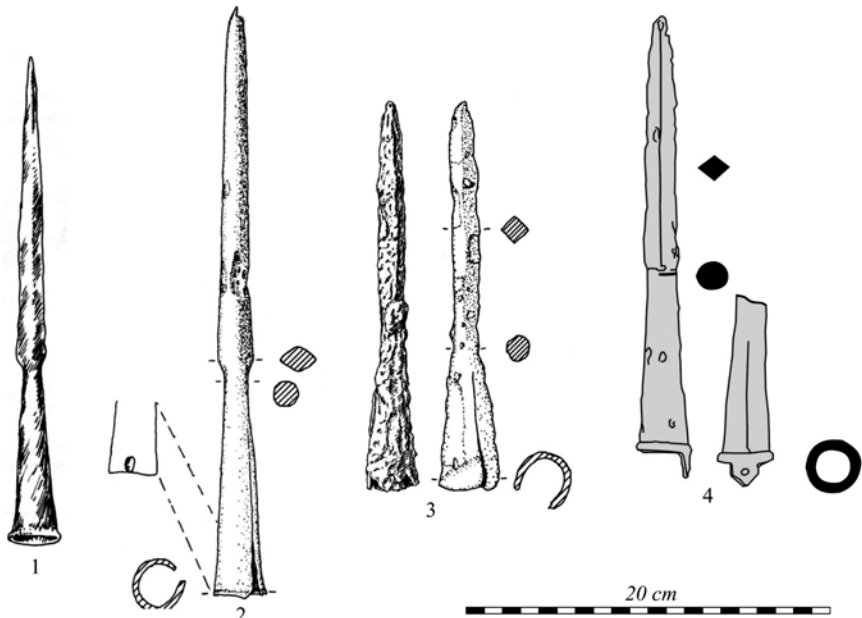


FIGURE 31 Lanceheads of type P.I.F.: 1. Tiszafüred–Majoros, grave No. 663 (Garam 1995, 85, Taf. 182.); 2. Košice–Šebastovce, grave No. 86 (Budinský-Krička – Točík 1991, 2324, Taf. XI/48.) (drawing of M. Husár); 3. Holiare, grave No. 551 (Točík 1968a, 85, Taf. LXXII/7.) (drawing of M. Husár); 4. Bernolákovo–Sakoň, grave No. 34 (Kraskovská 1962, 433, tab. VII/19.).

3. Socket closed by a ring pulled over it (P.I.E/1.f): The spearheads belonging to this variant are usually of good preservation, their neck is decorated with ribs, and their socket is closed by a ring (fig. 30/6–7). All of the known examples were found in the northern periphery of the Avar settlement area. The socket of the spearhead of grave No. 293 from Košice–Šebastovce (fig. 30/7) was closed by a looped ring.<sup>111</sup> This artefact is dated to the Late phase, more exactly to the second half of the 8th century.<sup>112</sup>

#### 1.1.6 Narrow Reed-shaped Spearheads of Quadrangular Cross Section (P.I.F)

The blade of the type is extremely narrow (average width is 1–1.5 cm), its cross section is quadrangular, and the neck is not emphasised (map 12, figs 31–32).

<sup>111</sup> Budinský-Krička – Točík 1991, 61, Taf. XLII/5.

<sup>112</sup> This dating is based on a strap-end with vegetal ornaments cast of copper alloy from grave No. 293 of Košice–Šebastovce. (Budinský-Krička – Točík 1991, 61, Taf. XLII/5).

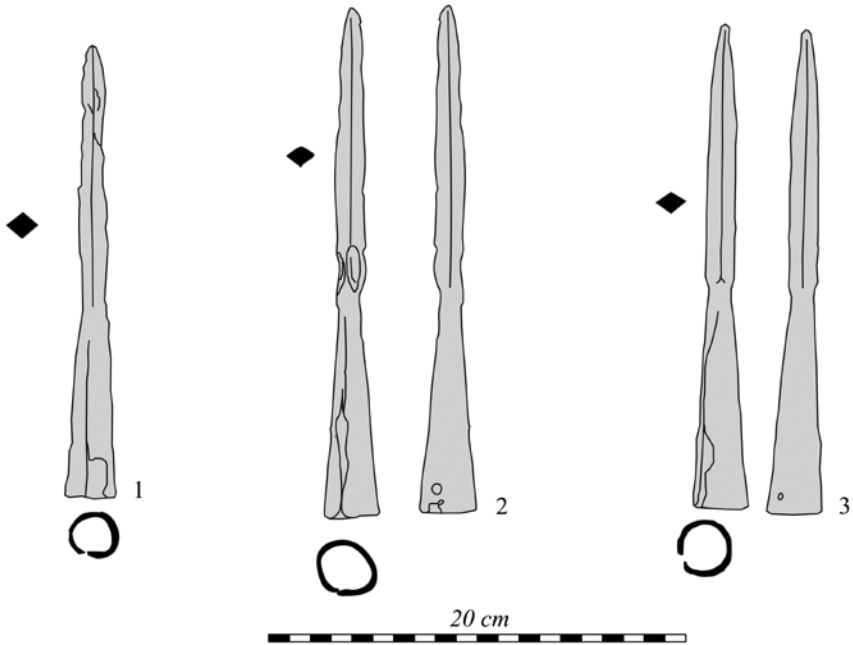


FIGURE 32 *Lanceheads of type P.I.F. 1*: 1. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 401 (Eisner 1952, 91–92, Obr. 45/9.); 2. Košice–Šebastovce, grave No. 96 (Budinský-Krička – Točík 1991, 27, Taf. XIV/1.); 3. Košice–Šebastovce, grave No. 86 (Budinský-Krička – Točík 1991, 2324, Taf. XI/48.).

Altogether 23 examples of this type are known, most of them dated to the Late phase except for the grave No. 20 from Kehida–Tsz-major which probably belongs to the Early phase based on the lead tubes found in the burial<sup>113</sup> and grave No. 1069 from Tiszafüred which is dated to the Middle phase by its belt-set composed of quadrangular mounts stamped of copper alloy sheet with imitations of stone inlay.<sup>114</sup> Variants are distinguished based on the proportion of the blade and socket.

#### 1.1.6.1 *The Narrow Reed-shaped Blade is Longer than the Socket (P.I.F/1)*

Ten spearheads belong to this variant, all dated to the Late phase (fig. 31/1–2).<sup>115</sup> Most of the examples were found in the northern periphery of the Avar

113 Szőke 2002, 77. 8/g.

114 Garam 1995, 126. Taf. 145.

115 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 815 (Eisner 1952, 174, t. 96/2); Holiare grave No. 551 (Točík 1968a, 85, Taf. LXXII/7); Komárno–8. Shipyard grave No. 30 (Trugly 1987, 256. Abb. 3, Taf. v/2); Komárno–8. Shipyard grave No. 72 (Trugly 1987, 265–266. Taf.

settlement area,<sup>116</sup> but they are also known from Transylvania<sup>117</sup> and the Great Hungarian Plain (map 12).<sup>118</sup> Grave No. 72 from Komárno–Shipyard<sup>119</sup> and No. 86 from Košice–Šebastovce (fig. 31/2)<sup>120</sup> are easily dated to the first half of the 8th century by their burial context.

#### 1.1.6.2 *The Blade is Shorter than the Socket (P.I.F/2)*

Five spearheads belong to this variant,<sup>121</sup> the use of which begun during the Middle phase,<sup>122</sup> but with most being dated to the Late phase.<sup>123</sup> Among these spearheads the artefacts from Tiszafüred cemetery are especially well represented,<sup>124</sup> which seems to be a local phenomenon.

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- XVI–XVII. Taf. XVII/3); Košice–Šebastovce grave No. 80 (Budinský-Krička – Točík 1991, 23–24, Taf. XI/48); Košice–Šebastovce grave No. 96 (Budinský-Krička – Točík 1991, 27, Taf. XIV/1); Lopadea Noua (Horedt 1958, 101, fig. 18/5); Tiszafüred–Majoros grave No. 365 (Garam 1995, 50–52, Abb. 21, Taf. 177); Tiszafüred–Majoros grave No. 447 (Garam 1995, 60, Taf. 179); Tiszafüred–Majoros grave No. 663 (Garam 1995, 85, Taf. 182).
- 116 Devinska Nová Ves–A–Tehel'ňa grave No. 815 (Eisner 1952, 174, t. 96/2); Holiare grave No. 551 (Točík 1968a, 85, Taf. LXXI/7); Komárno–8. Shipyard grave No. 30 and 72 (Trugly 1987, 256, Abb. 3, Taf. V/2; 265–266, Taf. XVI–XVII, Taf. XVII/3); Košice–Šebastovce grave No. 80 and 96 (Budinský – Krička – Točík 1991, 23–24, Taf. XI/48, 27, Taf. XIV/1).
- 117 Lopadea Noua (Horedt 1958, 101, fig. 18/5).
- 118 Tiszafüred–Majoros grave No. 365, 447 and 663 (Garam 1995, 50–52, Abb. 21, Taf. 177, 60, Taf. 179, 85, Taf. 182).
- 119 The burial is dated by the gilded cast bronze phalerae with lion representations, the gilded belt-mount cast of bronze with vegetal ornaments and the gilded strap-end cast of bronze with lion representation (Trugly 1987, 265–266, Taf. XVI–XVII).
- 120 The grave is dated by a cast bronze strap-end with grape-motives and disk-shaped belt mounts cast of bronze and the cast bronze phalerae decorated with animal heads (Budinský-Krička – Točík 1991, 23–24, Taf. XI)
- 121 Gyód–Máriahegy grave No. 38 (Kiss 1977, 40, Pl. VII); Komárno–8. Shipyard grave No. 85 (Trugly 1987, 271–272, Taf. XXVI–XXVIII, Taf. XXVI/13); Tiszafüred–Majoros grave No. 234 (Garam 1995, 36, Abb. 14, Taf. 176); Tiszafüred–Majoros grave No. 945 (Garam 1995, 112, Taf. 134, Taf. 186/1); Tiszafüred–Majoros grave No. 1069 (Garam 1995, 126, Taf. 145, Taf. 187/1).
- 122 The dating is based on the grave No. 1069 of Tiszafüred with its stamped strap-end with imitation of stone inlay and its stamped quadrangular belt mounts (Garam 1995, 126, Taf. 145).
- 123 Well dated Late phase burials are grave No. 38 of Gyód–Máriahegy, where cast bronze strap-end with griffon representations was found (Kiss 1977, 40, Pl. VII), and grave No. 85 of Komárno Shipyard with its gilded shield-shaped belt-mounts with lion representations and hat-phalerae with palmette-decoration (Trugly 1987, 271–272, Taf. XXVI–XXVIII).
- 124 Three of the five examples of this variant were found in this cemetery (Tiszafüred–Majoros grave No. 234, 945 and 1069 (Garam 1995, 36, Abb. 14, Taf. 176, 112, Taf. 134, Taf. 186/1, 126, Taf. 145, Taf. 187/1).

### 1.1.6.3 *The Length of the Blade and Socket is Equal (P.I.F/3)*

The blade of this variant is especially narrow and does not reach even the width of 2 cm, the edges are parallel, although the blade is a little broader above the neck (figs. 31/3–4, 32/1–3). The existence of the neck is the main difference between this variant and the examples of conical spearhead.

Altogether six spearheads belong to this variant,<sup>125</sup> half of which were found in the territory of Slovakia,<sup>126</sup> while the other half were found partly in the Great Hungarian Plain<sup>127</sup> or in Transdanubia (map 12).<sup>128</sup> The only datable find<sup>129</sup> suggests a date in the Late phase (8th century).

## 1.2 *Conical Spearheads (P.II)*

The main characteristic of this form-group is that the socket and blade are not separated by a neck, with the blade being a continuation of the socket. The type was first identified by Éva Garam during her analysis of spearheads from the Tiszafüred cemetery. She considered the type being analogous to those spearheads of the Saltovo-Maiaki culture of 8th–9th century Eastern Europe.<sup>130</sup>

These spearheads are conical in shape, their blade is of quadrangular or circular cross section, the socket is closed or the socket wings were bent next to each other. Altogether 51 spearheads belong to this form-group, ten of them dating to the Early phase, eight examples belong to the Middle phase, while the majority of spearheads of form-group P.II (33 pieces) are dated to the Late phase.

125 Bernelákovo grave No. 34 (Kraskovská 1962, 433. tab. VII/19); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 401 (Eisner 1952, 91–92, Obr. 45/9); Kehida–TSz-major grave No. 20 (Szóke 2002, 77. 8/g); Košice–Šebastovce grave No. 99 (Budinský–Krička – Točík 1991, 27–28, Taf. xv/9); Szárasd (Kovács 2001, 185. 206. 10. kép 4); Tiszafüred–Majoros grave No. 159 (Garam 1995, 26. Taf. 174); Tiszafüred–Majoros grave No. 313 (Garam 1995, 44, Taf. 82. Taf. 177).

126 Bernelákovo grave No. 34 (Kraskovská 1962, 433. tab. VII/19); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 401 (Eisner 1952, 91–92, Obr. 45/9); Košice–Šebastovce grave No. 99 (Budinský – Krička – Točík 1991, 27–28, Taf. xv/9).

127 Tiszafüred–Majoros grave No. 159 and 313 (Garam 1995, 26. Taf. 174, 44, Taf. 82. Taf. 177).

128 Szárasd (Kovács 2001, 185. 206. 10. kép 4).

129 The grave No. 34 of Bernelákovo is dated from the gilded disk-shaped belt-mounts cast of bronze, gilded strap-end cast of bronze with flower-decoration, and gilded rectangular belt-mounts cast of bronze and gilded lobular harness-mount cast of bronze (Kraskovská 1962, 433. tab. VII), all dated to the first half of Late phase.

130 After Pletneva 1967, 160. (Garam 1995, 350).

### 1.2.1 Regular Conical Spearheads (P.II.A)

33 spearheads belong to this type, their common characteristic being their regular geometric shape, their socket is closed, and no traces of manufacture are observable (map 13, figs. 33–35). Four examples are dated to the Early phase,<sup>131</sup> three pieces belong to the Middle phase,<sup>132</sup> while the rest (27 examples) are dated to the Late phase.

Two sub-types can be distinguished based on the proportion of the blade and socket: the blade is longer than or equal to the length of the socket.

The blade is longer than the socket (P.II.A/1): Altogether six examples belong to this variant which is common mainly during the Late phase (fig. 33/1, 4).<sup>133</sup> The spearhead from grave No. 101 from Komárno Shipyard is exceptional on account of its huge length, being more than 50 cm long.<sup>134</sup> The closest analogy to this spearhead is the weapon from grave No. 417 from Košice–Šebastovce<sup>135</sup> which is considerably shorter (36 cm long), but with their overall proportions being largely the same. All of the spearheads belonging to this group are dated to the Late phase.

The length of the blade and socket is equal (P.II.A/3): These spearheads are similar to the aforementioned, but they are shorter and their overall proportions more equal (fig. 33/2–3, 5–8).<sup>136</sup> The variant is well represented in the

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- 131 Budapest XXI. Csepel–Háros grave No. 47 (Nagy 1998, I. 158–159; II. Taf. 109/3); Előszállás–Bajcsihegy grave No. 20 (Kovrig 1955b, 169); Kölked–Feketekapu A grave No. 253 (Kiss 1996, 74. Taf. 55/2); Radvaň nad Dunajom–Virt grave No. 19 and stray find (Točík 1992, 30. obr. 37/5., obr. 48/12).
- 132 Budapest XXI. Csepel–Háros grave No. 52 (Nagy 1998, 160–161. II. Taf. 110/24); Gyenesdiás grave No. 5 (Heinic – Tamáska 2005, 156. Abb. 1b/16); Tiszafüred–Majoros grave No. 1159 (Garam 1995, 137, Taf. 155).
- 133 Komárno–3. Váradího u. grave No. 2 (Čilinská 1982, 347. Tab. 11/1); Košice–Šebastovce grave No. 254 (Budinský – Krička – Točík 1991, 55–56, Taf. xxxv11/16); Košice–Šebastovce grave No. 417 (Budinský – Krička – Točík 1991, 80–81; Taf. LIV/3); Tiszafüred–Majoros grave No. 199 (Garam 1995, 31–32, Abb. 199, Taf. 74, Taf. 175/1); Tiszafüred – Majoros grave No. 507 (Garam 1995, 68, Abb. 28, Taf. 98, Taf. 180/1); Tiszafüred–Majoros grave No. 685 (Garam 1995, 86, Abb. 35, Taf. 112, Taf. 182/1).
- 134 Trugly 1993, 194. Abb. 8. Taf. v/7.
- 135 Budinský–Krička – Točík 1991, 80–81; Taf. LIV/3.
- 136 Budapest XXI. Csepel–Háros grave No. 47 (Nagy 1998, I. 158–159; II. Taf. 109/3); Budapest XXI. Csepel–Háros grave No. 52 (Nagy 1998, 160–161. II. Taf. 110/24); Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuş 1977, 270. fig. 4/3); Előszállás–Bajcsihegy grave No. 20 (Kovrig 1955b, 169); Gyenesdiás grave No. 5 (Heinrich–Tamáska 2005, 156. Abb. 1b/16); Radvaň nad Dunajom–Virt grave No. 19 (Točík 1992, 30. obr. 37/5); Radvaň nad Dunajom–Virt stray find (Točík 1992, Obr. 48/12); Tiszaderzs–Szentimrei út grave No. 88 (Kovrig 1975, 223. fig. 10/5); Tiszafüred–Majoros grave No. 46 (Garam 1995, 13–16, Abb. 5, Taf. 62, Taf.

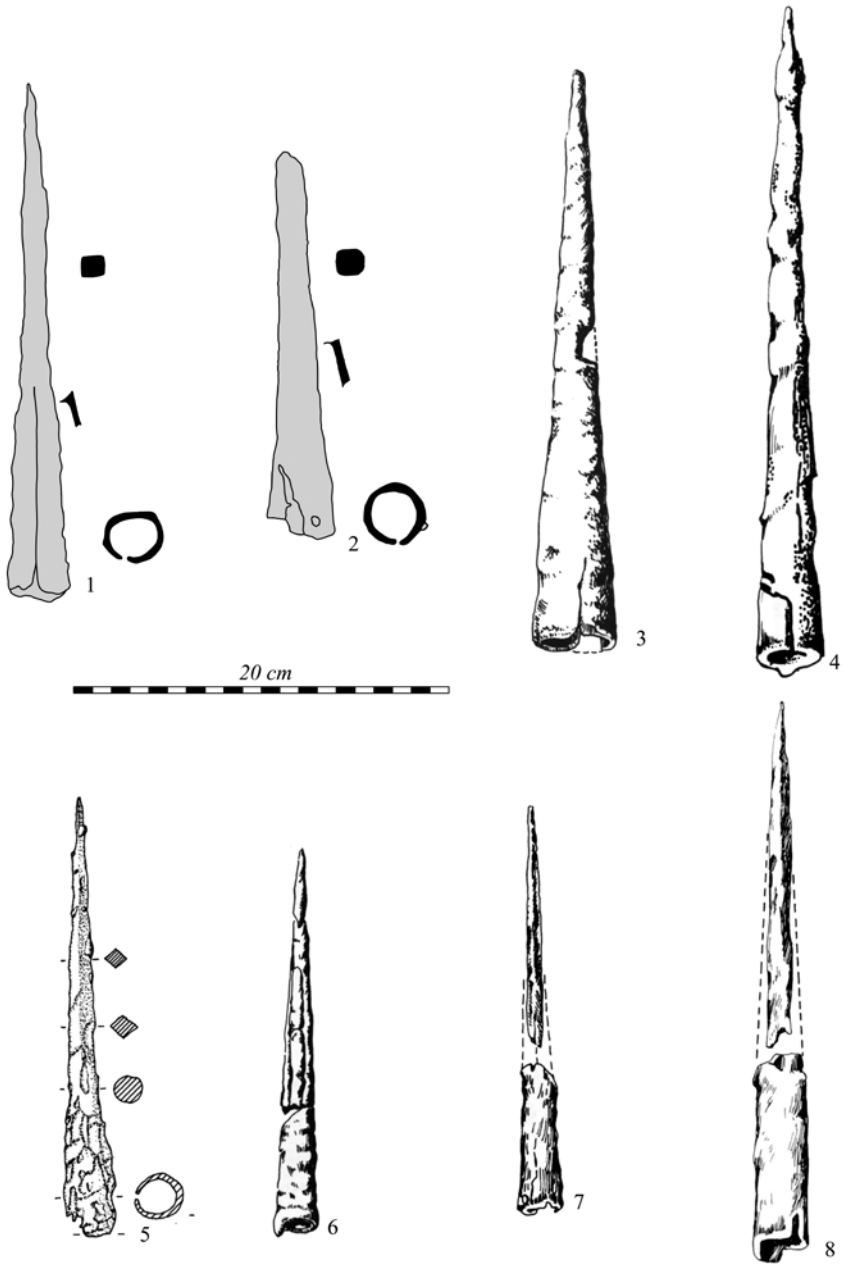


FIGURE 33 Lanceheads of type P.II.A.: 1. Kölked–Feketekapu A, grave No. 422 (Kiss 1996, 116, Taf. 79/7.); 2. Kölked–Feketekapu A, grave No. 253 (Kiss 1996, 74, Taf. 55/2.); 3. Tiszafüred–Majoros, grave No. 113 (Garam 1995, 21, 174/1.); 4. Tiszafüred–Majoros, grave No. 199 (Garam 1995, 31–32, Taf. 175/1.); 5. Cífer grave No. 10 (drawing of M. Husár); 6. Tiszafüred–Majoros, grave No. 46 (Garam 1995, 16, Taf. 173); 7. Tiszafüred–Majoros, grave No. 561 (Garam 1995, 75, Taf. 181/1.); 8. Tiszafüred–Majoros, grave No. 507 (Garam 1995, Taf. 180/1.).

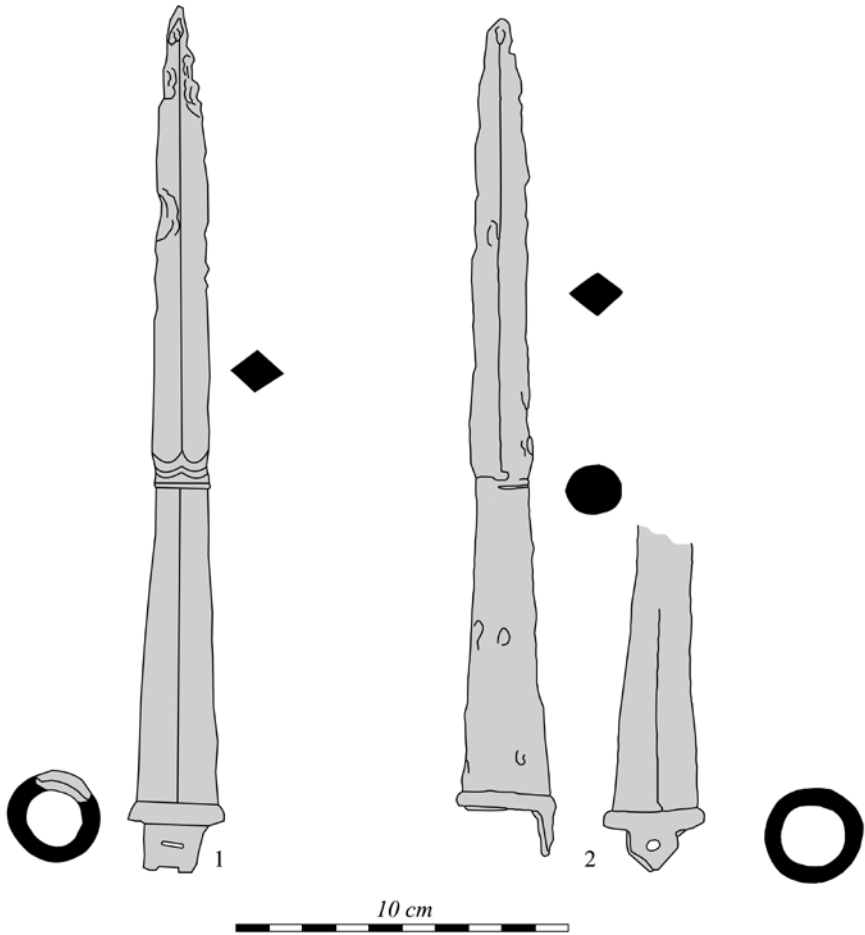


FIGURE 34 Lanceheads of type P.II.A/f: 1. Košice-Šebastovce, grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. xxxvii/16.); 2. Bernolákovo, grave No. 34 (Kraskovská 1962, 433, tab. VII/19.).



Early phase with five examples,<sup>137</sup> are present in burials of the Middle phase,<sup>138</sup> but are primarily characteristic of Late phase Avar burials.<sup>139</sup> It was probably used as a lance: a cavalry thrusting weapon, of which parallels are known mainly from the Eastern European steppes.

Spearheads with needle-shaped blades of quadrangular cross section (P.II.B/1):<sup>140</sup> This type is characterised by a narrow blade with parallel edges and quadrangular cross section, while the socket is conical in shape (fig. 35).<sup>141</sup>

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- 173/1); Tiszafüred–Majoros grave No. 113 (Garam 1995, 21. Abb. 8. Taf. 66, 174/1); Tiszafüred–Majoros grave No. 183 (Garam 1995, 28, Taf. 174); Tiszafüred–Majoros grave No. 330 (Garam 1995, 47, Abb. 20. Taf. 84. Taf. 177/1); Tiszafüred–Majoros grave No. 536/a (Garam 1995, 71, Taf. 100, Taf. 190/1); Tiszafüred–Majoros grave No. 561 (Garam 1995, 75, Taf. 102, Taf. 181/1); Vösendorf grave No. 32 (Sauer 2007, 92).
- 137 Budapest XXI. Csepel–Háros grave No. 47 (Nagy 1998, I. 158–159; II. Taf. 109/3); Előszállás–Bajcsihegy grave No. 20 (Kovrig 1955b, 169); Radvaň nad Dunajom–Virt grave No. 19 and stray find (Točík 1992, 30. obr. 37/5; Obr. 48/12); Tiszafüred–Majoros grave No. 183 (Garam 1995, 28, Taf. 174) The grave No. 253 of Kölked–Feketekapu A-cemetery was dated by a spatha, an oval buckle made of iron and its pear-shaped light-grey pottery vessel, together with a coin minted by Maurice Tiberius in 581/82 (Kiss 1996, Taf. 55). The grave No. 47 of Csepel–Háros (Budapest) is probably dated to the Early phase by its circular stirrup with rectangular loop (Nagy 1998, II. 117. Taf. 109/5–6).
- 138 Budapest XXI. Csepel–Háros grave No. 52 (Nagy 1998, 160–161. II. Taf. 110/24); Gyenesdiás grave No. 5 (Heinrich – Tamáska 2005, 156. Abb. 1b/16) The grave No. 52 of Csepel–Háros (Nagy 1998, 160–161. II. Taf. 110/24) is certainly dated to the Middle phase by its quadrangular belt-mounts stamped of a silver foil decorated by interlace ornament (Nagy 1998, 118. Taf. 110/5). The grave No. 5 of Gyenesdiás is dated to the same period by its iron belt-set (Heinrich – Tamáska 2005, 156. Abb. 1b/16).
- 139 Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270. fig. 4/3); Tiszaderzs–Szentimrei út grave No. 88 (Kovrig 1975, 223. fig. 10/5); Tiszafüred–Majoros grave No. 46, 113, 330, 536a and 561 (Garam 1995, 13–16, Abb. 5, Taf. 62, Taf. 173/1, 21. Abb. 8. Taf. 66, 174/1, 47, Abb. 20. Taf. 84. Taf. 177/1, 71, Taf. 100, Taf. 190/1, 75, Taf. 102, Taf. 181/1); Vösendorf grave No. 32 (Sauer 2007, 92).
- 140 For their list see map 12, illustrations: figs. 35–36.
- 141 Budakalász–Dunapart grave No. 85 (МТА RI 97.1.22.14); Komárno–8. Shipyard grave No. 87 (Trugly 1987, 272. Taf. xxx/5); Komárno–8. Shipyard grave No. 101 (Trugly 1993, 194. Abb. 8, Taf. v/7); Komárno–8. Shipyard grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/9); Košice–Šebastovce grave No. 161 (Budinský – Krička – Točík 1991, 38, Taf. xxII/15); Kölked–Feketekapu A grave No. 422 (Kiss 1996, 116. Taf. 79/7); Radvaň nad Dunajom–Žitavská Tõň grave No. 24/1956 (Budinský – Krička 1956, 25–26. Tab. xxIII/17); Radvaň nad Dunajom–Žitavská Tõň grave No. 6 (Čilinská 1963, 89–90. tab. IV: 22); Štúrovo–Vojenské cvičisko grave No. 5 (Točík 1968b, 11, Taf. xv/31); Tiszafüred–Majoros grave No. 456 (Garam 1995, 60, Abb. 26, Taf. 92, Taf. 179); Tiszafüred–Majoros grave No. 716 (Garam 1995, 90, Abb. 37, Taf. 114, Taf. 186/1); Tiszafüred–Majoros grave No. 1142 (Garam 1995, 134–135, Taf. 153. Taf. 188); Tiszafüred–Majoros grave No. 1194 (Garam 1995, 140–141, Taf. 158. Taf. 188/1); Tiszaszentimre–Református templom (Kovrig 1955b, 174; Madaras 1995a, No. 86).

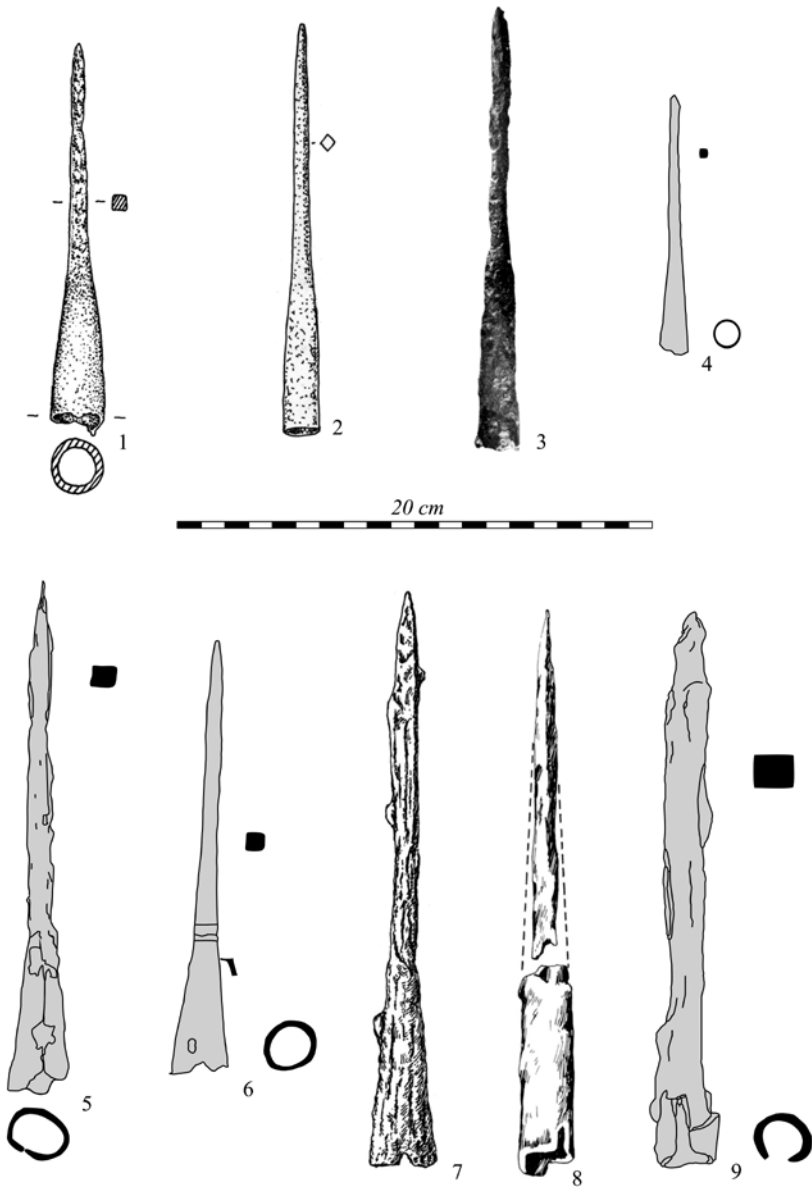


FIGURE 35 Lanceheads of type P.II.B: 1. Komárno–8. Shipyard, grave Nr. 87 (Trugly 1987, 272, Taf. xxx/5.); 2. Kölked–Feketekapu A, grave Nr. 422 (Kiss 1996, 116, Taf. 79/7.); 3. Radvaň nad Dunajom–Žitavská Tóň, grave Nr. 24/1956 (Budinský-Krička 1956, 25–26, Tab. xxiii/17.); 4. Košice–Šebastovce, grave Nr. 161 (Budinský-Krička – Točík 1991, 38, Taf. xxii/15.); 5. Budakalász–Dunapart, grave Nr. 85 (MTA RI 97.1.22.14); 6. Tiszaszentimre–Református templom (Kovrig 1955b, 174; Madaras 1995a, Nr. 86.); 7. Štúrovo–Vojenské cvičisko, grave Nr. 5 (Točík 1968b, 11, Taf. xv/31.) (drawing by M. Husár); 8. Tiszafüred–Majoros, grave Nr. 507 (Garam 1995, 68, Taf. 180/1.); 9. Radvaň nad Dunajom–Virt, grave Nr. 19 (Točík 1992, 30, obr. 37/5.) (drawing by M. Husár).

The blade is longer than the socket. Such weapons are also known from the Late Antique Italy (Invellino) where Volker Bierbrauer regarded them as catapult projectiles ('*Geschoßbolzen*' in German).<sup>142</sup> These weapons were thrusting weapons in the Avar-age Carpathian Basin, and any similarity is coincidental.

The geographical distribution of this type is evenly spread, with examples found in Transdanubia,<sup>143</sup> Southwestern Slovakia<sup>144</sup> and in the Great Hungarian Plain,<sup>145</sup> however, no pieces are known from Transylvania (map 14, fig. 36).

This narrow type of conical spearhead was already used in the Middle phase as attested by four graves.<sup>146</sup> Eight spearheads belong to the Late phase,<sup>147</sup> with the type being continuously used not only during the first,<sup>148</sup> but also the second half of the 8th century.<sup>149</sup> The type was already in use from the second

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- 142 Bierbrauer 1987, 170–171; II. Taf. 58: 1–10, Taf. 59: 1–5.
- 143 Budakalász–Dunapart grave No. 85 (MTA RI 97.1.22.14); Kölked–Feketekapu A grave No. 422 (Kiss 1996, 116. Taf. 79/7); both are dated to the Middle phase.
- 144 Komárno–8. Shipyard grave No. 87, 101 and 139 (Trugly 1987, 272. Taf. xxx/5, 194. Abb. 8. Taf. v/7, 211–212. Taf. XLVII/9); Radvaň nad Dunajom–Žitavská Tõň grave No. 24/1956 and 6 (Budinský-Krička 1956, 25–26. Tab. XXIII/17; Čilinská 1963, 89–90. tab. IV/22); Štúrovo–Vojenské cvičisko grave No. 5 (Točík 1968b, 11, Taf. xv/31).
- 145 Košice–Šebastovce grave No. 161 (Budinský-Krička – Točík 1991, 38; Taf. xxII/15); Tiszafüred–Majoros grave No. 456, 716, 1142 and 1194 (Garam 1995, 60, Abb. 26, Taf. 92, Taf. 179, 90, Abb. 37. Taf. 114, Taf. 186/1, 134–135. Taf. 153. Taf. 188, 140–141. Taf. 158. Taf. 188/1); Tiszaszentimre–Református templom (Kovrig 1955b, 174; Madaras 1995a, No. 86).
- 146 The grave No. 85 of Budakalász (MTA RI 97.1.22.14), the burial from Tiszaszentimre (Kovrig 1955b, 174; Madaras 1995a, No. 86), the grave No. 24 from Žitavská Tõň (394) and the spearhead from grave No. 422 of the A cemetery of Kölked is dated to the Middle phase by its belt-set composed of quadrangular-shaped belt-mounts and propeller-shaped mount cut out of foil. (Kiss 1996, Taf. 79. 233).
- 147 Komárno–8. Shipyard grave No. 87, 101 and 139 (Trugly 1987, 272. Taf. xxx/5, 194. Abb. 8. Taf. v/7, 211–212. Taf. XLVII/9); Košice–Šebastovce grave No. 161 (Budinský-Krička – Točík 1991, 38; Taf. xxII/15); Radvaň nad Dunajom–Žitavská Tõň grave No. 6 (Čilinská 1963, 89–90. tab. IV: 22); Štúrovo–Vojenské cvičisko grave No. 5 (Točík 1968b, 11, Taf. xv/31); Tiszafüred–Majoros grave No. 716, 1142 and 1194 (Garam 1995, 90, Abb. 37. Taf. 114, Taf. 186/1, 134–135. Taf. 153. Taf. 188, 140–141. Taf. 158. Taf. 188/1).
- 148 The grave No. 161 of Košice–Šebastovce is dated to the first half of the 8th century by its belt set composed of rectangular belt-mounts cast of copper alloy and decorated by griffon-representations (Budinský-Krička – Točík 1991, 38; Taf. xxII/9). The grave No. 6 of Žitavská Tõň is dated to the beginning of Late phase by its rectangular belt-mounts cut out of copper alloy sheet (Čilinská 1963, 89–90; tab. IV). The grave No. 1194 of Tiszafüred is dated to the same period by its disc-shaped mounts cast of bronze (1st stage of Late phase)(Garam 1995, 140–141. Taf. 158. Taf. 188/1).
- 149 The latest known example is found from grave No. 1142 of Tiszafüred dated by its U-shaped belt-mounts decorated by S-shaped vegetal ornaments. (Garam 1995, Taf. 153, Taf. 188).

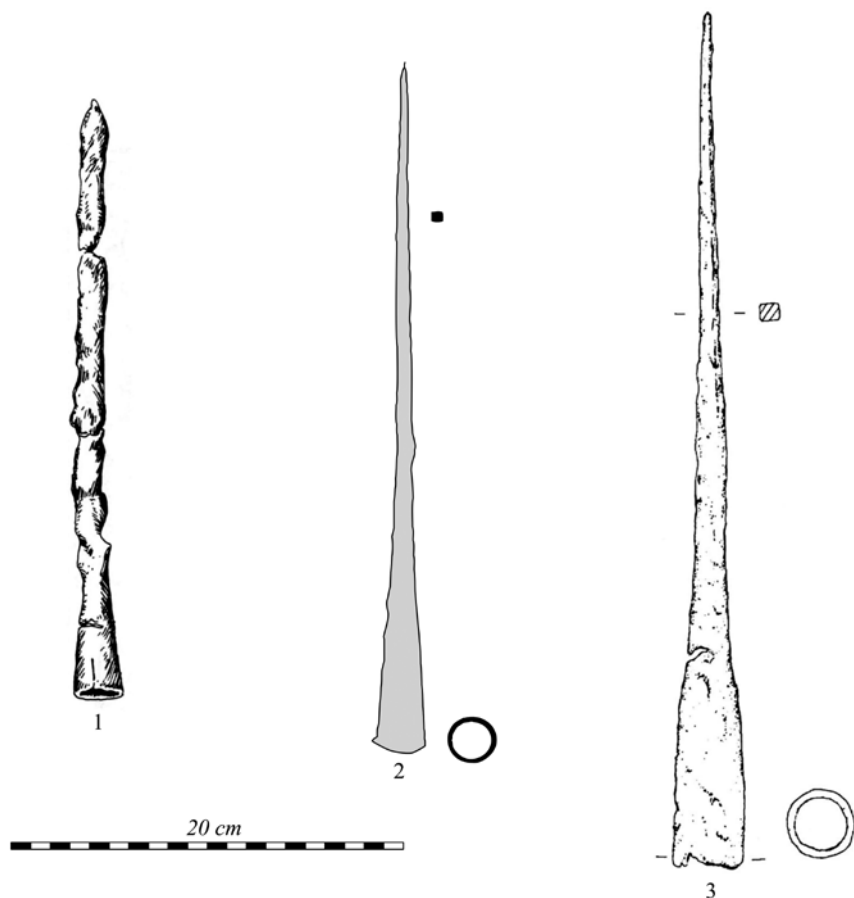


FIGURE 36 Lanceheads of type P.II.B.: 1. Tiszafüred–Majoros, grave No. 716 (Garam 1995, 90, Taf. 186/1.); 2. Košice–Šebastovce, grave No. 417 (Budinský-Krička – Točík 1991, 80–81, Taf. LIV/3.); 3. Komárno–8. Shipyard, grave No. 101 (Trugly 1993, 194, Abb. 8., Taf. V/7.).

third of the 7th century until the second half of the 8th century, and was one of the most long-lived types of the era.

### 1.3 Lenticular (Leaf-shaped) Spearheads (P.III)

Lenticular spearheads comprise one of the most numerous form-groups of Avar-age polearms: 188 examples belong to this group, most of which (123 pieces) are dated to the Early phase, while the number of Middle (nine) and Late phase spearheads (53) is much lower. Similar spearheads are well known from Western and Central European Merovingian and Early Carolingian contexts, suggesting the western origin of this group.

Lenticular spearheads were first studied in the cemetery of Környe, where it was compared to Lombard spearheads.<sup>150</sup> The first classification was made by Ágnes Cs. Sós and Ágnes Salamon during the publication of Pókaszeptek cemetery from Transdanubia. They classified these lenticular spearheads into two groups: Group II. leaf-shaped spearheads and Group III. narrow leaf-shaped spearheads. They separated the types based on the size (A<sub>1</sub> and A<sub>2</sub>) and the proportions of the blade and socket (B<sub>1</sub> and B<sub>2</sub>).<sup>151</sup> This system was the first step towards creating combination types.

In what follows, lenticular spearheads are classified into various types: P.III.A (broad lenticular spearheads), P.III.B (narrow lenticular spearheads), P.III.C (narrow lenticular spearheads with rhombic cross section, P.III.D (lenticular spearheads with central rib), P.III.E (openwork spearheads) (fig. 6).

Broad lenticular spearheads (P.III.A) are characterised by their oval shape and a blade width of more than 3 cm. This type was the most popular form among lenticular spearheads during the Avar Age, but mostly during the Early phase. Sub-types can be distinguished by the proportions of the blade and the socket.

### 1.3.1 Broad Lenticular Spearheads with Blades which are Longer than their Socket (P.III.A/1.e)

The greatest width of the blade is in the toward its middle, with the cross section being either rhombic or lenticular. The length of these spearheads is between 25 and 40 cm. The socket is usually narrow, its diameter not reaching 3 cm, its length being around 10 cm. In most cases the socket is closed, and on some examples traces of hammering can be observed (map 15, figs. 37–43).

Most of the spearheads belonging to this type are dated to the Early phase (67 pieces), but examples are also known from the Middle (three examples)<sup>152</sup>

<sup>150</sup> Salamon – Erdélyi 1971, 56.

<sup>151</sup> Group II is divided into two sub-groups based on size: great size (I: length of 32–44 cm) and middle size (length of 28–31 cm). Common characteristics of this group are that the socket is very short compared to the blade, and the diameter of the socket is between 2.5–3 cm. Group III contains lenticular spearheads of a maximum of 30 cm in length. The blade is longer than the socket, and they were usually found in pairs, and in some cases even three examples from one grave. Group IV only contains one spearhead. (Sós – Salamon 1995, 67–69) This classification was a significant step toward combination types, although it is not consistent.

<sup>152</sup> Aiudul de Sus (Horedt 1958, 93. fig. 17/2; Cosma et al. 2013, 60, fig. 31); Bratislava–Devinska Nová Ves–A–Tehel'ňa grave No. 559 (Eisner 1952, 126); Zalakomár–Lesvári-dűlő grave No. 545B (Szőke 2002, 77. 8/a).

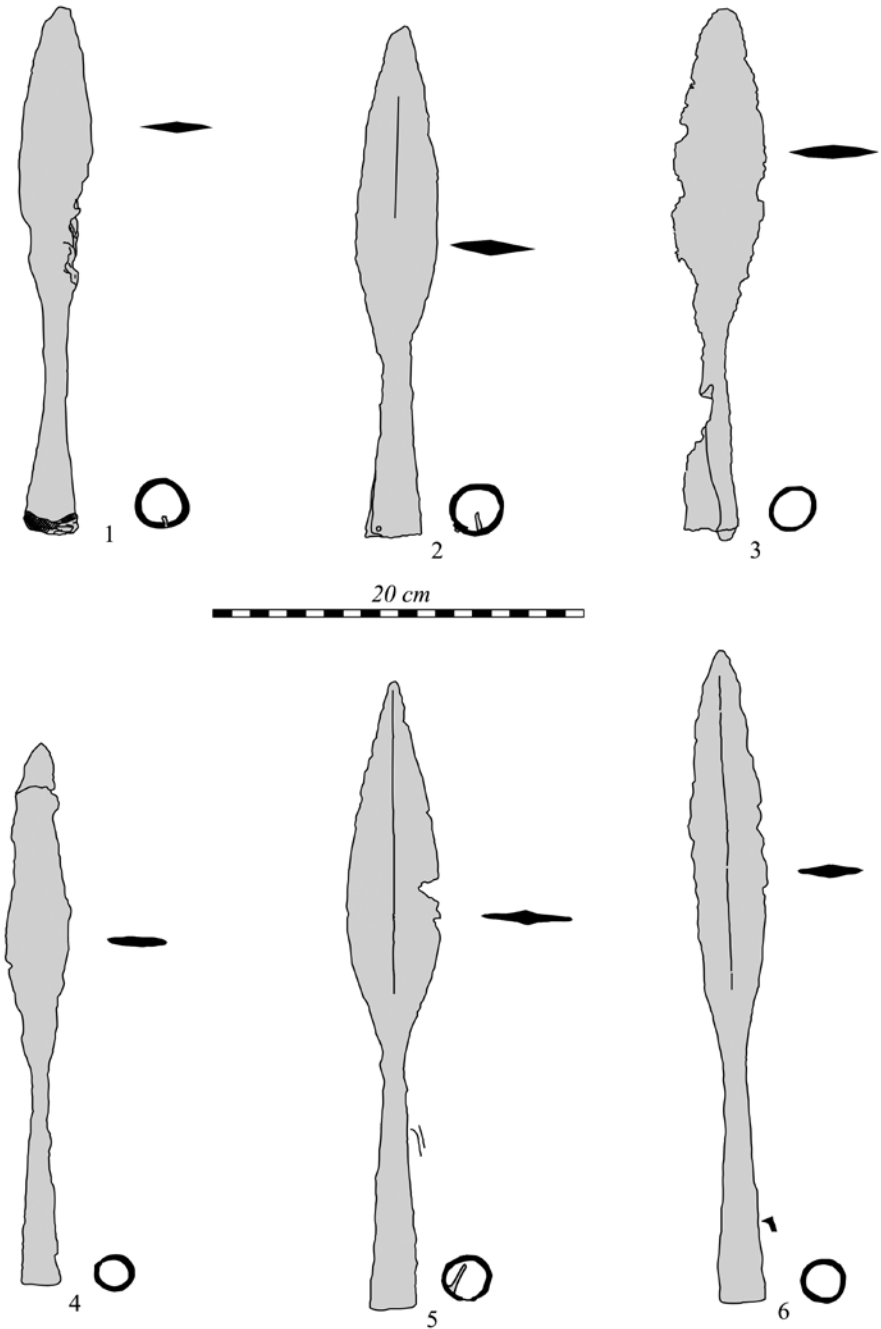


FIGURE 37 *Spearheads of type P.III.A: 1. Budakalász–Dunapart, grave No. 223; 2. Budakalász–Dunapart, grave No. 670; 3. Budakalász–Dunapart, grave No. 680; 4. Budakalász–Dunapart, grave No. 778; 5. Budakalász–Dunapart, grave No. 1003; 6. Budakalász–Dunapart, grave No. 1024.*

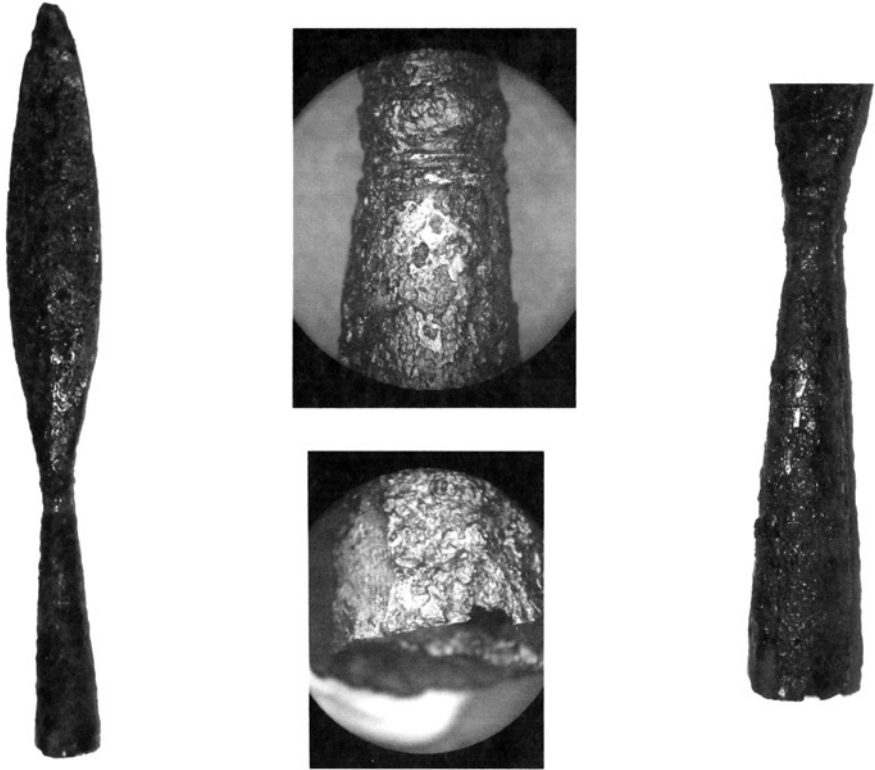


FIGURE 38 Spearhead of type P.III.A: Budakalász–Dunapart, grave No. 437 (macro-photos).

and Late phases (13 pieces).<sup>153</sup> Geographically most spearheads classified to this type are distributed in Transdanubia<sup>154</sup> with few number of specimens

153 Câmpia Turzii (Horedt 1958, 94–95. fig. 11/4); Cífer–Pác I. Nad mlynom I. grave No. 85 (Zábojník 1995, No. 15; Fusek 2006, 31–32; 40. Tab. 111/1); Kaposvár – Toponár–40. számú őrház grave No. 57 (58) (Bárdos 1978a, 21. 28. 62–63); Košice–Šebastovce grave No. 238 (Budinský – Krička – Točík 1991, 52–53. Taf. xxxiv/1); Söjtör–Petőfi utca grave No. 16 and 24 (Szőke 1994a, 10. t. 2. t. 6; Szőke 2002, 81, 6); Szekszárd–Bogyiszlói út grave No. 557 (Rosner 1999, 73. Taf. 38/1); Tiszafüred–Majoros grave No. 175, 350, 352, 474, 845 and 1246 (Garam 1995, Abb. 10. 28, Taf. 174/1, 49–50, Abb. 20. Taf. 177, 50, Abb. 21. Taf. 85. Taf. 177/1, 64, Taf. 94, Taf. 179/1, 102, Taf. 126. Taf. 184/1, 150. Abb. 62, Taf. 166. Taf. 189/1).

154 55 examples, 68.35%. Spearheads from the sites of Budakalász, Budapest, Kölked–Feketekapu A and B, Környe, Szekszárd–Bogyiszlói út, Üröm, Vaszar, Veszprém–Jutas, see the list.

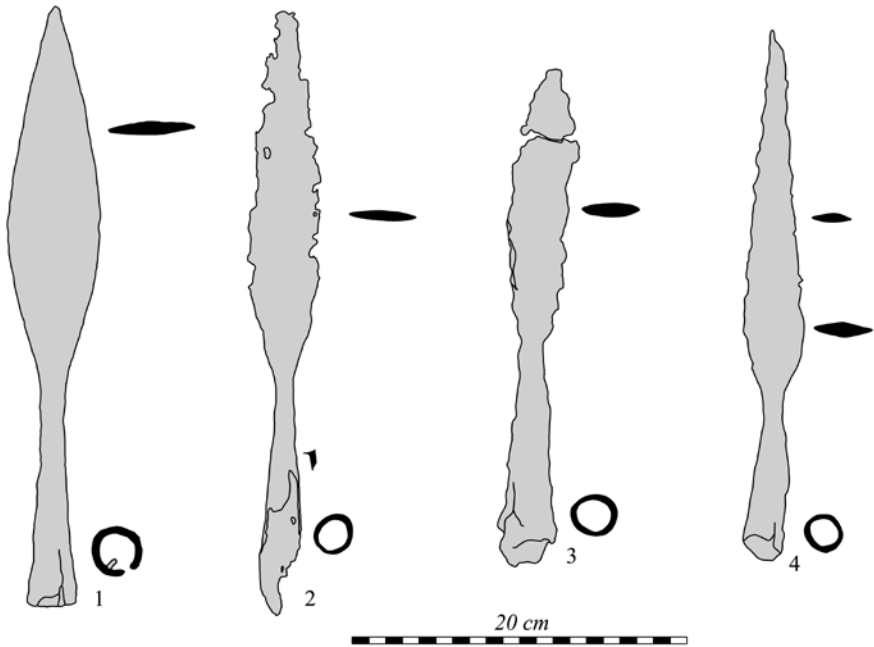


FIGURE 39 *Spearheads of type P.III.A: 1. Budakalász–Dunapart, grave No. 1472; 2. Budapest III. Szentendrei út (Nagy 1998, 33. II. Taf. 37/14.); 3. Bölcske–Kömlődi út, grave No. 14 (Szelle 1891, 242. 2/10 kép; Kovrig 1955b, 167.); 4. Bugyi–Űrbőpuszta, grave No. 21 (Bóna 1957, 158, XLIII/17. tábla).*

being found in the Great Hungarian Plain,<sup>155</sup> Transylvania<sup>156</sup> and Southwestern Slovakia (map 15).<sup>157</sup> As a result of the examination of the type's geographic and chronological distribution this blade form appears mainly prevalent in the Early phase in Transdanubia (50 spearheads).

The spearhead of grave No. 437 of Budakalász–Dunapart (fig. 38) is of particular interest, since its neck was decorated with a nodus framed by double ribs. Its socket was soldered together by copper according to electron-microscopic examination.<sup>158</sup> This technological process was also described by the medieval author Theophilus Presbyter.<sup>159</sup>

155 From the sites of Baja, Bugyi–Űrbőpuszta, Košice–Šebastovce, Szeged–Kundomb, Tiszafüred–Majoros. 15 examples, 18.98%, mainly from the site of Tiszafüred (11 examples).

156 Three examples, from the sites at Aiudul de Sus, Band and Câmpia Turzii.

157 Five examples, from the sites at Devínska Nová Ves, Cífer, Radvaň nad Dunajom–Virt.

158 These examinations were carried out by the Metal Technological Research Group of Budapest Technical University and led by János Dobránszky.

159 Theophilus 1986, 145–146.



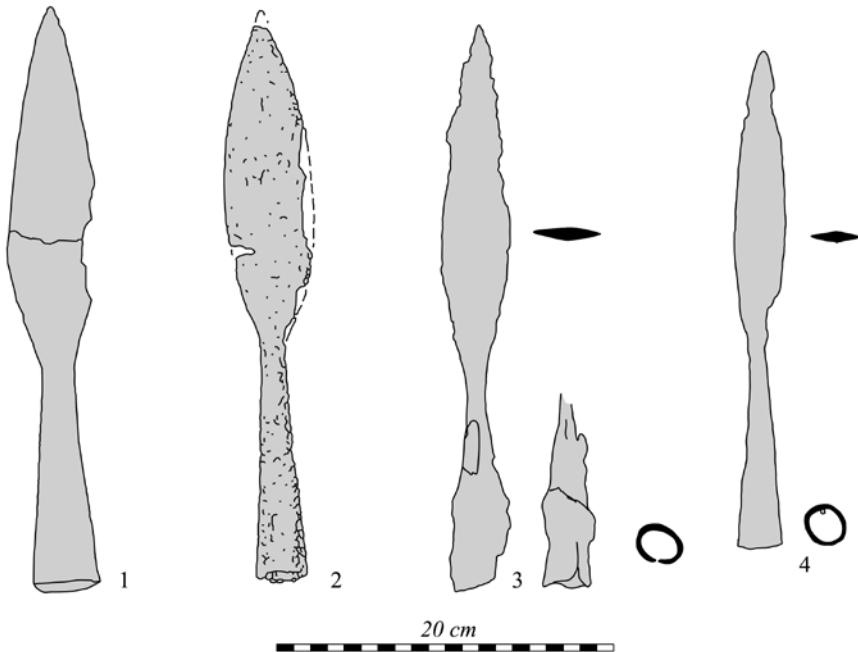


FIGURE 40 Spearheads of type P.III.A: 1. Kölked–Feketekapu A, grave No. 260 (Kiss 1996, 76, Taf. 57/20.); 2. Kölked–Feketekapu A, grave No. 259 (Kiss 1996, 75–76, Taf. 57/19.); 3. Kölked–Feketekapu A, grave No. 474 (Kiss 1996, 127–128, Taf. 86/3.); 4. Kölked–Feketekapu A, grave No. 386 (Kiss 1996, 106, Taf. 75/10.).

Their use is characteristic of the earliest phase of the Kölked–Feketekapu A cemetery (figs. 40–41), although they are still present in 7th-century burials. Their dating is based on the buckles with shield-based prong (*‘Schilddornschnalle’*) and tripartite belt-sets dated to the turn of the 6th–7th century,<sup>160</sup> but such weapons were also used during the first<sup>161</sup> and second third of the

160 The grave No. 142 of Kölked A cemetery was found together with a buckle with shield-base pin (*‘Schilddornschnalle’*) (Kiss 1996, Taf. 41) which is dated to the turn of the 6th–7th century according to the South German chronology (Siegmond 1999, 172). Analogy of that buckle was found in the grave No. 116 of Jutas together with a coin of Phocas minted in 608/609 (Kiss 1996, 206): For the coin of Jutas: (Bóna 1982–83, 133; Garam 1992, 141). A special variant of the buckle type is the so-called ‘Christ-buckle’ which is dated to the end of the 6th, beginning of the 7th century in Franconia. (Kühn 1970–73, 64–65). Ursula Koch dated this type to the 7th–8th phase of the South German chronology (580—first third of the 7th century) (Koch 2001, 87).

161 The spearhead from grave No. 392 of Kölked is dated by its button-shaped belt-mounts and strap-ends cut out of a sheet (Kiss 1996, 215, Taf. 76).

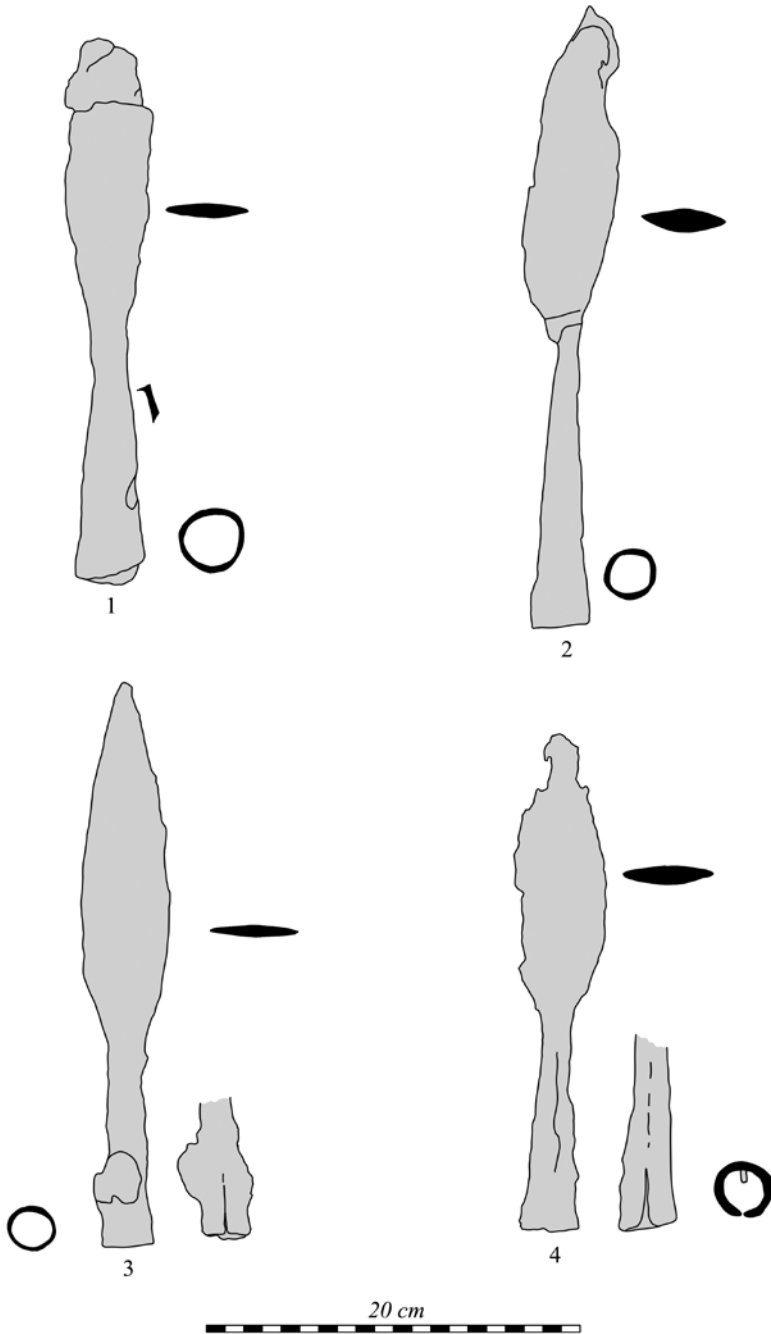


FIGURE 41 *Spearheads of type P.III.A: 1. Kölked–Feketekapu A, grave No. 65 (Kiss 1996, 33, Taf. 29/4.); 2. Kölked–Feketekapu A, grave No. 142 (Kiss 1996, 5152, Taf. 41/12.); 3. Kölked–Feketekapu A, grave No. 405 (Kiss 1996, 113., Taf. 78/6.); 4. Kölked–Feketekapu A, grave No. 406 (Kiss 1996, 114, Taf. 78/8.).*

7th century.<sup>162</sup> The spearheads of this type from the Pókaszepetk cemetery are dated to the first half of the 7th century,<sup>163</sup> with the upper limit of their use being around the middle of the 7th century.<sup>164</sup> Similar spearheads are well known from the Lombard and Gepid cemeteries of the first half of 6th century, and in Merovingian cemeteries of Germany where they were used between the middle of the 6th century until the first decades of the 7th century.<sup>165</sup>

The broadlenticularspearheads were continuously used during the Middle<sup>166</sup> and Late phases.<sup>167</sup> Their geographical distribution shifted slightly northwards

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- 162 The grave No. 223 of Kölked–Feketekapu A cemetery is dated by a buckle with shield-base pin and broad lobular belt-mounts to the second third of the 7th century (Kiss 1996, Taf. 50). The buckle is dated by the Phocas-solidus of grave No. 116 of Jutas. (Bóna 1982–83, 133. Kiss 1996, 203) This buckle type belongs to the 7th phase of the South-German chronology of Ursula Koch (Koch 2001, 87), while the broad lobular belt-mounts are known not only from the Early but from the Middle phase burials, like Gyenesdiás. Analogies for this mount were listed by Attila Kiss (1996, 218). Grave No. 107 from the same cemetery is dated by stamped silver belt-mounts with dot-comma ornaments and sword with silver P-shaped suspension loops (Kiss 1996, Taf. 34–35). The belt-set is dated by analogy (Aalan hoard) to the second quarter of the 7th century (Werner 1974, 121. Taf. VII; Garam 2001, 119). A similar spearhead was found in grave No. 259 of Kölked A together with a Salona-Histria type buckle, stamped belt-set and Byzantine double-edged sword with crossguard cast of copper alloy (Kiss 1996, Taf. 57). Salona-Histria type buckles are usually dated to the last third of the 6th century and beginning of the 7th century, although the example from Kölked is later, probably dated to the middle of the 7th century according to Uenze (1966, 146). Éva Garam suggests that such buckles disappear after the first third of the 7th century (Garam 2001, 109). The sword was dated to the second third of the 7th century both by Attila Kiss (1987a, 204) and Éva Garam (2001, 159). The spearhead from grave No. 406 is dated by purse-buckle decorated by animal figures (dogs) cast of copper alloy which is characteristic of the second third of the 7th century (Uenze 1966, 156; Garam 2001, 111–112).
- 163 The grave No. 35 of Pókaszepetk (Sós – Salamon 1995, Pl. IV) is dated by trapezoid bronze-foil pendants with dotted edges which is characteristic find of the Martynovka type hoards and date the burial to the first half of the 7th century. Similar pendants are known from several Early Avar cemeteries of Transdanubia, such as Oroszlány, Pécs-Köztemető and Cserkút (Sós – Salamon 1995, 46). Grave No. 121 is dated by strap-ends cut out of silver foil to the Early phase (Sós – Salamon 1995, Pl. XIII. 15–19).
- 164 Grave No. 360 from Pókaszepetk is dated by purse-buckle with animal figures. (Sós – Salamon 1995, Pl. XXII: 12. for the chronology of the buckle type: Garam 2001, 111–112).
- 165 Schretzheim I–III. phase: 545/550–590/600 (Koch 1977, 37, 109–110); South German 5th phase: 530–600 (Koch 2001, 62, 75).
- 166 The spearhead from grave No. 545B from Zalakomár is dated to the Middle phase (Szóke 2002, 77. 8/a).
- 167 These spearheads are smaller than the weapons of the Early phase: while the average length of Early examples is around 30 cm, the weapons dated to the Late phase are smaller in size, their average length being between 15 and 20 cm.

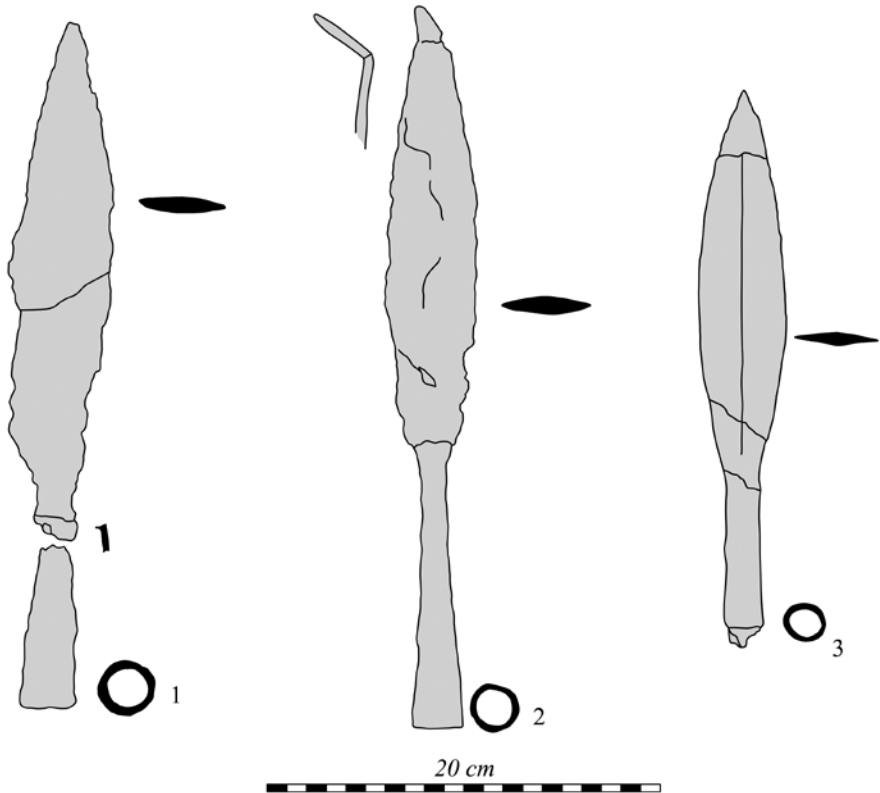


FIGURE 42 *Spearheads of type P.III.A: 1. Kölked–Feketekapu B, grave No. 80 (Kiss 2001, 25–26, Taf. 26/2.); 2. Kölked–Feketekapu B, grave No. 443 (Kiss 2001, 141–142, Taf. 82/4.); 3. Kölked–Feketekapu B, grave No. 135 (Kiss 2001, 67–68, Taf. 42/2.).*

during this period, but they remained mostly characteristic of Transdanubia (map 15).

#### 1.3.1.1 *The Blade is Shorter than the Socket (P.III.A/2)*

The main characteristic of this type is that the blade is short, lenticular, and the socket is long, conical and decorated by a rib on its lower edge (fig. 44). This type was probably used as a javelin on account of its small size and overall blade proportions. Altogether 17 artefacts belong to this type.<sup>168</sup>

<sup>168</sup> Band grave No. 115 (Kovács 1913, 341. 63. kép); Bernolákovo grave No. 53 (Kraskovská 1962, 436–437. tab. XI/1); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 95 (Eisner 1952, 30–31, Obr. 28/1); Budakalász–Dunapart grave No. 245; Budapest XXI. Csepel–Háros grave No. 73 (Nagy 1998, 169, Taf. 114/14); Čataj I. Zemanské–Gejzovce grave No. 145 (Hanuliak – Zábójník 1982, 498; Szentpéteri 1993, 121); Nošlac grave No. 16 (Rusu

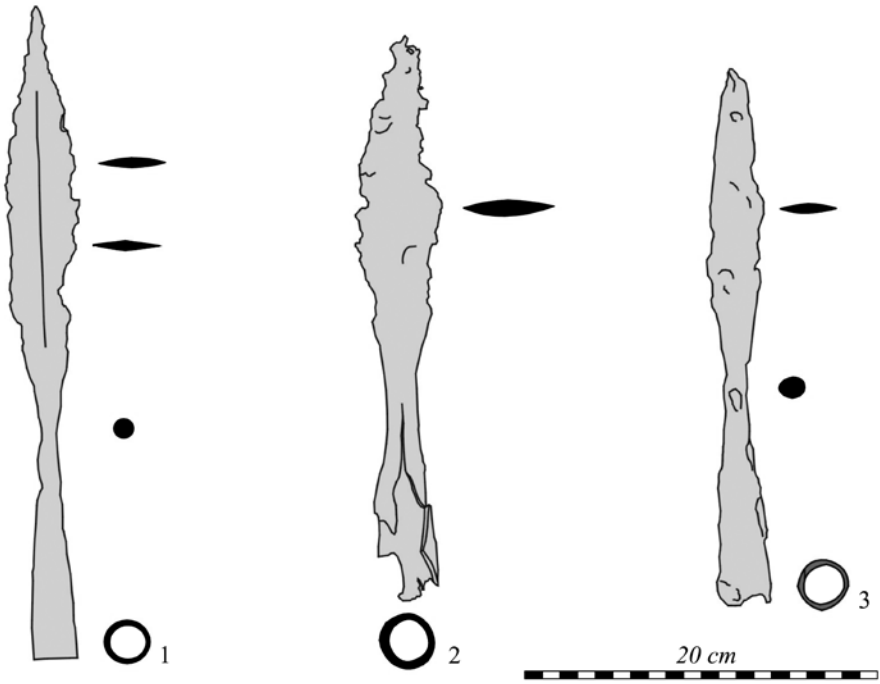


FIGURE 43 *Spearheads of type P.III.A.*: 1. Bratislava–Devínska Nová Ves–A Tehelňa, grave Nr. 559 (Eisner 1952, 126.); 2. Bratislava–Devínska Nová Ves–A Tehelňa, grave Nr. 597 (Eisner 1952, 132–133, t. 72/1.); 3. Bratislava–Devínska Nová Ves–A Tehelňa, grave Nr. 765a (Eisner 1952, 161–162, t. 81/8.).

The geographical distribution of this type is evenly spread (map 16), and are found in Transdanubia,<sup>169</sup> in the Great Hungarian Plain,<sup>170</sup> Southwest-

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- 1962, fig. 4/11); Radvaň nad Dunajom–Žitavská Tôň grave No. 33 (Čilinská 1963, 95–96. tab. x/35); Štúrovo–Vojenské cvičisko grave No. 154 (Točík 1968b, 44–45. Taf. xxxiv/23); Szentés–Nagyhegy grave No. 31 (Csallány 1956, 923–925); Tiszafüred–Majoros grave No. 451 (Garam 1995, 60; Abb. 25; Taf. 92, Taf. 179/1); Tiszafüred–Majoros grave No. 757 (Garam 1995, 94, Taf. 117); Tiszafüred–Majoros grave No. 831 (Garam 1995, 101, Taf. 125, Taf. 183/1); Tiszafüred–Majoros grave No. 1009/a (Garam 1995, 120. Abb. 48. Taf. 140. Taf. 187); Vác–Kavicsbánya grave No. 189 (Tettamanti 2000, 42–43. Taf. 9/3); Valalíky–Všechsvätých grave No. 44/83 (Béř 1984, 40; Zábójník 1995, Taf. 111); Várpalota–Gimnázium grave No. 218 (Erdélyi – Németh 1969, 192. xxiii. t. 4).
- 169 Budakalász–Dunapart grave No. 245 and Budapest XXI. Csepel–Háros grave No. 73 (Nagy 1998, 169, Taf. 114/14); Vác–Kavicsbánya grave No. 189 (Tettamanti 2000, 42–43. Taf. 9/3); Várpalota–Gimnázium grave No. 218 (Erdélyi – Németh 1969, 192. xxiii. t. 4).
- 170 Szentés–Nagyhegy grave No. 31 (Csallány 1956, 923–925); Tiszafüred–Majoros grave No. 451, 757, 831 and 1009/a (Garam 1995, 60; Abb. 25; Taf. 92, Taf. 179/1, 94, Taf. 117, 101,

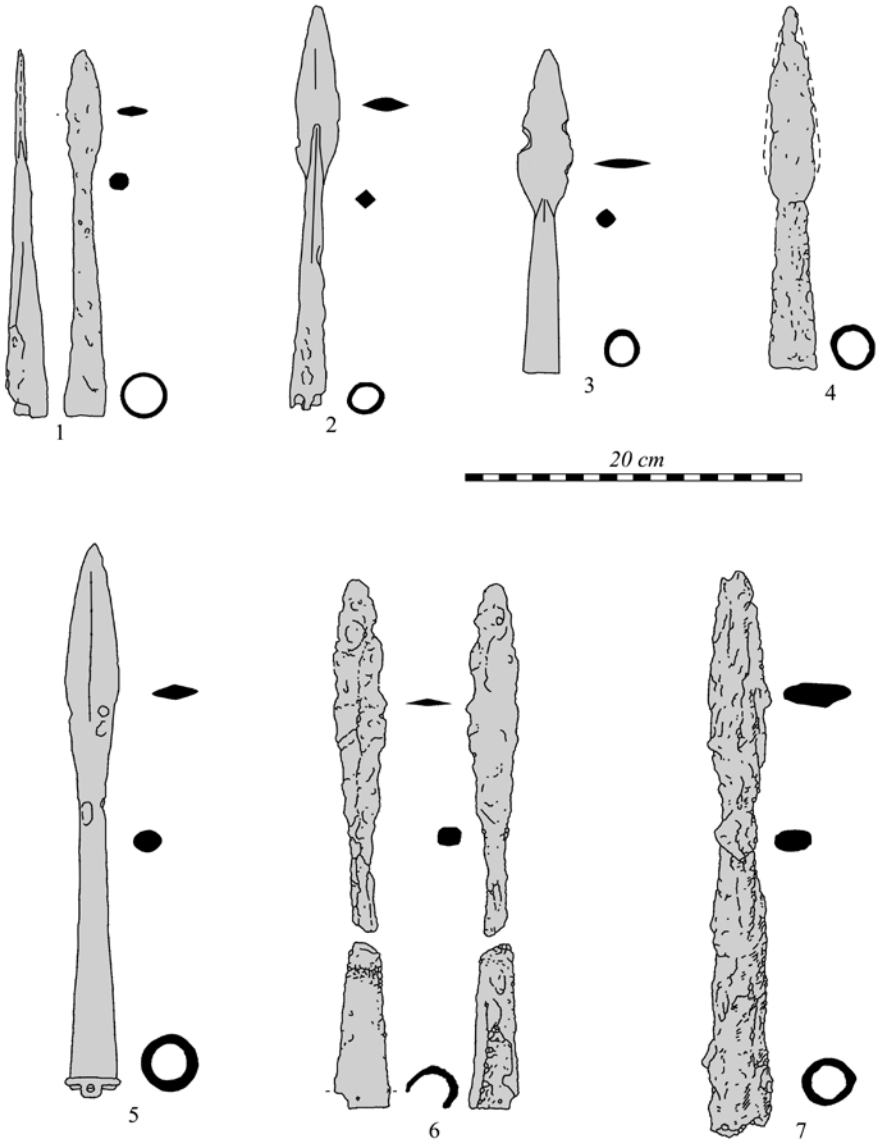


FIGURE 44 Spearheads of type P.III.A/2: 1. Radvaň nad Dunajom–Žitavská Tôň, grave No. 33 (Čilinská 1963, 95–96, tab. X/35.); 2. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 95 (Eisner 1952, 3031, Obr. 28/1.); 3. Košice–Šebastovce, grave No. 314 (Budinský-Krička – Točík 1991, 63, Taf. XLIII/9.); 4. Komárno–8. Shipyard, grave No. 129 (Trugly 1993, 207, Taf. XXXVI/4.); 5. Bernolákovo–Sakoň, grave No. 53 (Kraskovská 1962, 436–437, tab. XI/1.); 6. Valalíky–Všechsvätých, grave No. 44/83 (Béres 1984, 40; Zábajník 1995, Taf. III.); 7. Štúrovo–Vojenské cvičisko, grave No. 38 (Točík 1968b, 20–21, Taf. XX/20.).

ern Slovakia,<sup>171</sup> and Transylvania.<sup>172</sup> This territorial difference also reflects a chronological division, since all of the Transdanubian and Transylvanian artefacts are dated to the Early phase, while the spearheads of Southwestern Slovakia belong to the Late phase. The chronological position of the spearheads from Tiszafüred are exceptional since most of them are dated to the Middle phase except for one example which is dated to the beginning of the 8th century.<sup>173</sup>

Their chronological distribution is also even, and according to their burial context they were in use during the Early (six examples from Transdanubia and Transylvania),<sup>174</sup> Middle (three examples from the Great Hungarian Plain: all from the Tiszafüred cemetery)<sup>175</sup> and Late phases (eight examples from Southwestern Slovakia and Great Hungarian Plain).<sup>176</sup>

### 1.3.2 Narrow Lenticular Spearheads of Flat Rhombic or Lenticular Cross Section (P.III.B)

#### 1.3.2.1 *The Blade is Longer than the Socket (P.III.B/1.d)*

The main characteristic of this type (P.III.B/1.d) is its smaller size, narrower blade width, lighter weight and narrower socket (diameter of 1.5 cm) than that of spearheads of type P.III.A/1. Their length is around 25–30 cm, but

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Taf. 125, Taf. 183/1; 120. Abb. 48. Taf. 140. Taf. 187); Valalíky–Všechsvätých grave No. 44/83 (Béres 1984, 40; Zábajník 1995, Taf. 111).

- 171 Bernolákovo grave No. 53 (Krátková 1962, 436–437. tab. XI/1); Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 95 (Eisner 1952, 30–31, Obr. 28/1); Čataj I. Zemanské-Gejzovce grave No. 145 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121); Radvaň nad Dunajom–Žitavská Tôň grave No. 33 (Čilinská 1963, 95–96. tab. X/35); Štúrovo – Vojenské cvičisko grave No. 154 (Točík 1968b, 44–45. Taf. XXXIV/23).
- 172 Band grave No. 115 (Kovács 1913, 341. 63. kép); Nošlac grave No. 16 (Rusu 1962, fig. 4/11).
- 173 Tiszafüred–Majoros grave No. 1009/a (Garam 1995, 120. Abb. 48. Taf. 140. Taf. 187).
- 174 Band grave No. 115 (Kovács 1913, 341. 63. kép); Budakalász–Dunapart grave No. 245; Budapest XXI. Csepel–Háros grave No. 73 (Nagy 1998, 169, Taf. 114/14); Nošlac grave No. 16 (Rusu 1962, fig. 4/11); Vác–Kavicsbánya grave No. 189 (Tettamanti 2000, 42–43. Taf. 9/3); Várpalota–Gimnázium grave No. 218 (Erdélyi – Németh 1969, 192. XXIII. t. 4).
- 175 Tiszafüred–Majoros grave No. 451, 757 and 831 (Garam 1995, 60; Abb. 25; Taf. 92, Taf. 179/1, 94, Taf. 117, 101, Taf. 125, Taf. 183/1).
- 176 Bernolákovo grave No. 53 (Krátková 1962, 436–437. tab. XI/1); Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 95 (Eisner 1952, 30–31, Obr. 28/1); Čataj I. Zemanské-Gejzovce grave No. 145 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121); Radvaň nad Dunajom–Žitavská Tôň grave No. 33 (Čilinská 1963, 95–96. tab. X/35); Štúrovo–Vojenské cvičisko grave No. 154 (Točík 1968b, 44–45. Taf. XXXIV/23); Szentes–Nagyhegy grave No. 31 (Csallány 1956, 923–925); Tiszafüred–Majoros grave No. 1009/a (Garam 1995, 120. Abb. 48. Taf. 140. Taf. 187); Valalíky–Všechsvätých grave No. 44/83 (Béres 1984, 40; Zábajník 1995, Taf. 111).

their blade width is less than 3 cm. The narrower diameter of the socket is of functional importance, since a narrower shaft would have been required which would have effected its power and increased its fragility. Altogether 54 spearheads belonging to this type were found in 41 burials (map 17, figs. 45–47). It was mainly used in the Early phase (figs. 45–46), with 41 spearheads having been found in 29 burials from Transdanubia (map 17). The Middle phase is represented by only two examples,<sup>177</sup> whilst a slightly larger group of these spearheads (ten pieces) are dated to the Late phase, mostly from Southwestern Slovakia and the Great Hungarian Plain.<sup>178</sup> Consequently, this type can be divided into an Early and Late variant which will be presented separately.

The 41 spearheads from the Early phase were found in 29 burials, mainly from Transdanubia, the only exception being a Transylvanian burial.<sup>179</sup> Some of these burials contained two<sup>180</sup> or even three spearheads.<sup>181</sup> This depositional rite was only typical for the Early phase Transdanubian cemeteries. Only one 'Gepid' burial is known with double spearheads of this type which dates to the 6th century.<sup>182</sup> One possible interpretation of the deposition of these spearheads in pairs or threes is that they were used as javelins.<sup>183</sup> The type is dated to the second half of the Early phase, with a small-sized variant from grave No. 360 at Pókaszeptk being dated by a cast copper alloy purse-buckle decorated with two animal figures to the middle of the 7th century.<sup>184</sup>

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- 177 Radvaň nad Dunajom–Žitavská Tňň grave No. 3 (Čilinská 1963, 89. tab. 111/18); Tiszafüred–Majoros grave No. 577 (Garam 1995, 76, Abb. 31. Taf. 104. 181/1).
- 178 Bóly–Sziebert puszta–A grave No. 1 (Papp 1962, 168–169; 111. t. 16); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 765a (Eisner 1952, 161–162, t. 81/8); Čataj I. Zemanské–Gejzovce grave No. 113 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121); Košice–Šebastovce grave No. 131 and 232 (Budinský–Krička – Točík 1991, 32–33. Taf. XVIII/28, 50–51, Taf. xxxii/6); Mistelbach–Krankenhaus grave 'A' (Mitscha–Mähreim 1941, 7. Taf. 1/15; Distelberger 1996, 105–109); Štúrovo–Vojenské cvičisko grave No. 258 (Točík 1968b, 67–68. Taf. LI/14); Terehegy–Márfai döggút grave No. 6 (Kiss 1977, 147–148. Pl. LX); Tiszafüred–Majoros grave No. 692 (Garam 1995, 88, Abb. 35. Taf. 112. Taf. 182/1).
- 179 Band grave No. 52 (Kovács 1913, 324–325. 43. kép 15).
- 180 Cikó grave B (or 555) (Kiss – Somogyi 1984, 41. tábla 21–22); Pécs–Köztemető grave No. 30 (Kiss 1977, 6, xxxviii. tábla); Várpalota–Unió homokbánya grave No. 210 (Erdélyi – Németh 1969, 190); Pókaszeptk grave No. 76 (Sós – Salamon 1995, Pl. ix: 5–6) and 360 (Sós – Salamon 1995, Pl. xxii: 1).
- 181 Budakalász–Dunapart grave No. 1271; Csákberény–Orondpuszta grave No. 44 (Székesfehérvár, 1KM 10.217); Oroszlány–Borbálatelep (Sós – Salamon 1995, 71. unpublished); Pókaszeptk grave No. 88 (Sós – Salamon 1995, Pl. x/1–3).
- 182 Kisköre–Páp tanya grave No. 43 (Bóna – Nagy 2002, 194; Taf. 29/6–7).
- 183 Sós – Salamon 1995, 72. (based on: Zásterová 1971, 78).
- 184 Garam 2001, 111–112.



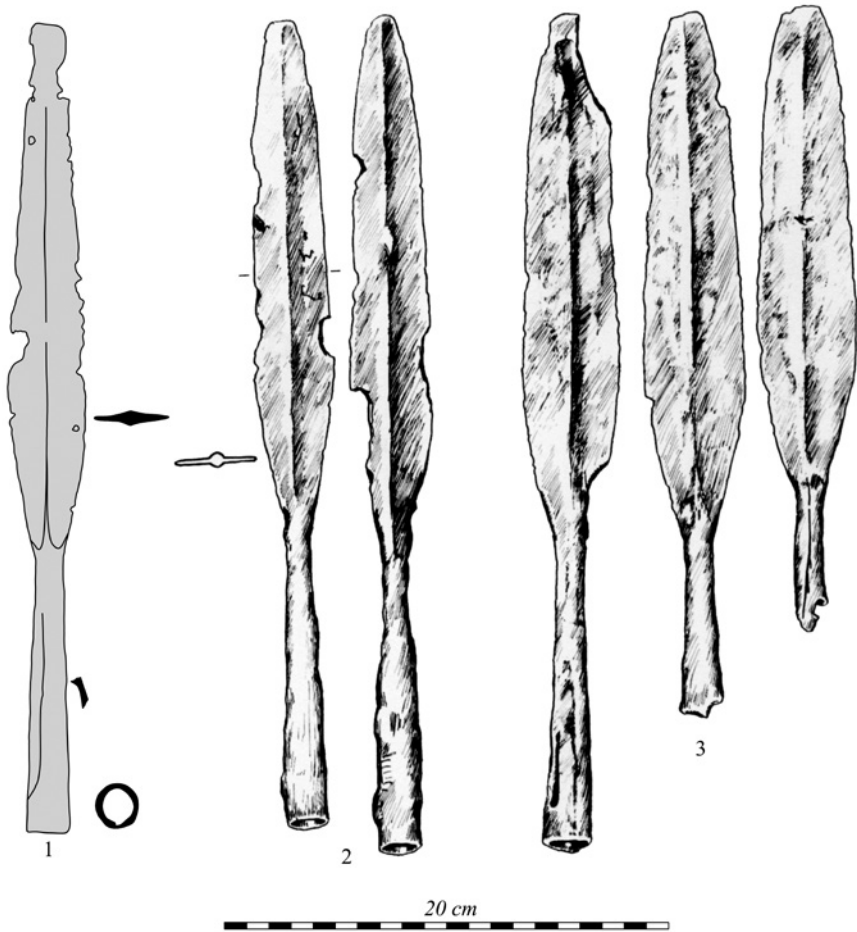


FIGURE 45 Spearheads of type P.III.B: 1. Cikó, grave No. 555 (or grave 'B') (Kovrig 1955a, 34; Kovrig 1955b, 167–168; Kiss – Somogyi 1984, 66, 80, 243, 41. tábla 21–22.); 2. Pókaszeptek–Mesterföldek, Avar utca, grave No. 76 (Sós – Salamon 1995, 143, Fig. IX.); 3. Pókaszeptek–Mesterföldek, Avar utca, grave No. 88 (Sós – Salamon 1995, 145, Fig. X.).

### 1.3.2.2 Narrow Lenticular Spearheads (P.III.B) from the Middle and Late Phase

Altogether 12 spearheads with narrow lenticular blades are known from the Middle and Late phase (fig. 47).<sup>185</sup> A clear territorial shift can be observed

185 Bóly–Sziebert puszta–A grave No. 1 (Papp 1962, 168–169; III. t. 16); Bratislava – Devínska Nová Ves–A–Tehel'ňa grave No. 765a (Eisner 1952, 161–162, t. 81/8); Čataj I. Zemanské–

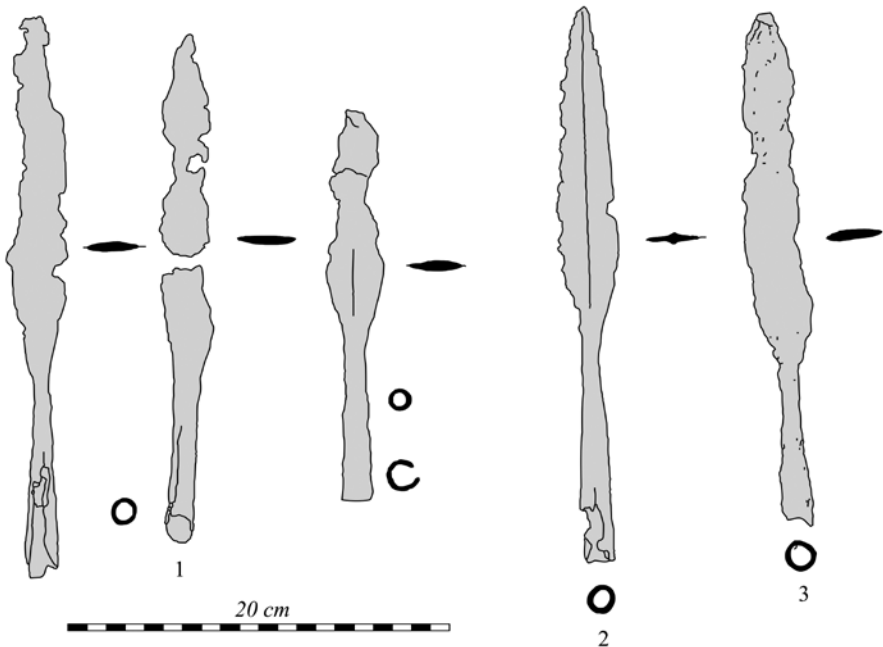


FIGURE 46 *Spearheads of type P.III.B: 1. Csákberény–Orondpuszta, grave 44 (IKM 10.217); 2. Csákberény–Orondpuszta, grave No. 89B (IKM 10.249); 3. Előszállás–Bajcsihegy, grave No. 200 (IKM 53.75.1).*

toward the northern periphery of the Avar Qaganate, with the majority of such spearheads being found in Slovakia (seven examples out of 12), the rest being evenly distributed between Austria (Mistelbach), Transdanubia (two spearheads) and the Great Hungarian Plain (two examples from Tiszafüred) (map 17).

A special variant of this type has an extremely long, narrow blade and short, closed socket. The proportion of the blade and the socket is 3:1. Only three

Gejzovce grave No. 113 (Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121); Košice–Šebastovce grave No. 131 (Budinský-Krička – Točík 1991, 32–33, Taf. xviii/28); Košice–Šebastovce grave No. 232 (Budinský-Krička – Točík 1991, 50–51, Taf. xxxii/6); Košice–Šebastovce grave No. 292 (Budinský-Krička – Točík 1991, 60–61, Taf. xli/32); Mistelbach–Krankenhaus grave 'A' (Mitscha-Mähreim 1941, 7, Taf. 1/15; Distelberger 1996, 105–106); Radvaň nad Dunajom–Žitavská Tõň grave No. 3 (Čilinská 1963, 89, tab. iii/18); Štúrovo–Vojenské cvičisko grave No. 258 (Točík 1968b, 67–68, Taf. li/14); Terehegy–Márfai dõgkút grave No. 6 (Kiss 1977, 147–148, Pl. lx); Tiszafüred–Majoros grave No. 577 (Garam 1995, 76, Abb. 31, Taf. 104, Taf. 181/1); Tiszafüred–Majoros grave No. 692 (Garam 1995, 88, Abb. 35, Taf. 112, Taf. 182/1).

such spearheads are known from the Late phase. The spearhead from grave No. 131 at Košice–Šebastovce (fig. 47/1) measures 39 cm in length, despite its fragmentary state. Although the sides of the socket are flattened, its cross section was quadrangular,<sup>186</sup> but this spearhead cannot be assigned to the Pfullingen type characterised by similarly square-shaped socket, because its blade shape and proportions are different. The closest analogy for the blade of this spearhead comes from grave No. 113 from Čataj (fig. 47/2).<sup>187</sup> The spearheads of grave No. 24 at Söjtör–Petőfi utca cemetery have similar proportions, although the blade is only 5 cm wide, and can thus be classified to type 'P.III.A'.<sup>188</sup>

The type is dated to the Late phase, with grave No. 131 from Šebastovce (fig. 47/1) belonging to the 2nd stage of Late phase based on its hinged strap-end, cast of copper alloy and decorated with cornucopia, and small strap-ends with S-shaped tendrils.<sup>189</sup> The appearance of this type can be explained by western influences.

### 1.3.3 Narrow Lenticular Blade with Rhombic Cross Section (P.III.C)

This type is characterised by a long, narrow lenticular blade, the blade width of which is between 2.5–3 cm, and a cross section which is rhombic (figs. 48–49). This blade form is only characteristic of the Late phase (8th century) and is only distributed in Slovakia (i.e. northern periphery of the Avar settlement area: map 18).<sup>190</sup> This blade form is probably of western origin, since a number of variants can be identified with Late Merovingian or Early Carolingian spearhead types from the late 7th–early 8th centuries in Central Europe.

Three variants of this type can be distinguished based on the proportion of the blade and the socket: 1. the blade is longer than the socket (P.III.C/1.e), 2. the blade is shorter than the socket (P.III.C/2.e), and 3. the blade and socket length are equal (P.III.C/3).

186 Budinský-Krička – Točík 1991, 32–33. Taf. XVIII/28.

187 Hanuliak – Zábojník 1982, 498; Szentpéteri 1993, 121.

188 Szőke 1994a, 10. t. 6.

189 Budinský-Krička–Točík 1991, 32–33. Taf. XVIII.

190 Bratislava–Devínska Nová Ves–A Tehel'ňa grave No. 422 (Eisner 1952, 97, t. 40/8); Bratislava–Devínska Nová Ves–A Tehel'ňa grave No. 453 (Eisner 1952, 103, t. 50/1); Bratislava–Devínska Nová Ves–A Tehel'ňa grave No. 616 (Eisner 1952, 137, t. 65/8); Bratislava–Devínska Nová Ves–A Tehel'ňa grave No. 777 (Eisner 1952, 163, t. 84/6); Čataj I. Zemanské–Gejzovce grave No. 77 (Hanuliak – Zábojník 1982, 498); Čataj I. Zemanské–Gejzovce grave No. 176 (Hanuliak – Zábojník 1982, 498; Szentpéteri 1993, 121); Koroncó, stray find (XJM 53.310.1); Nové Zámky I. Belohorského Záhrada grave No. 369 (Čilinská 1966, 72–73. Taf. LVII/26); Radvaň nad Dunajom–Žitavská Tôň grave No. 11 (Čilinská 1963, 91. tab. VI/12).

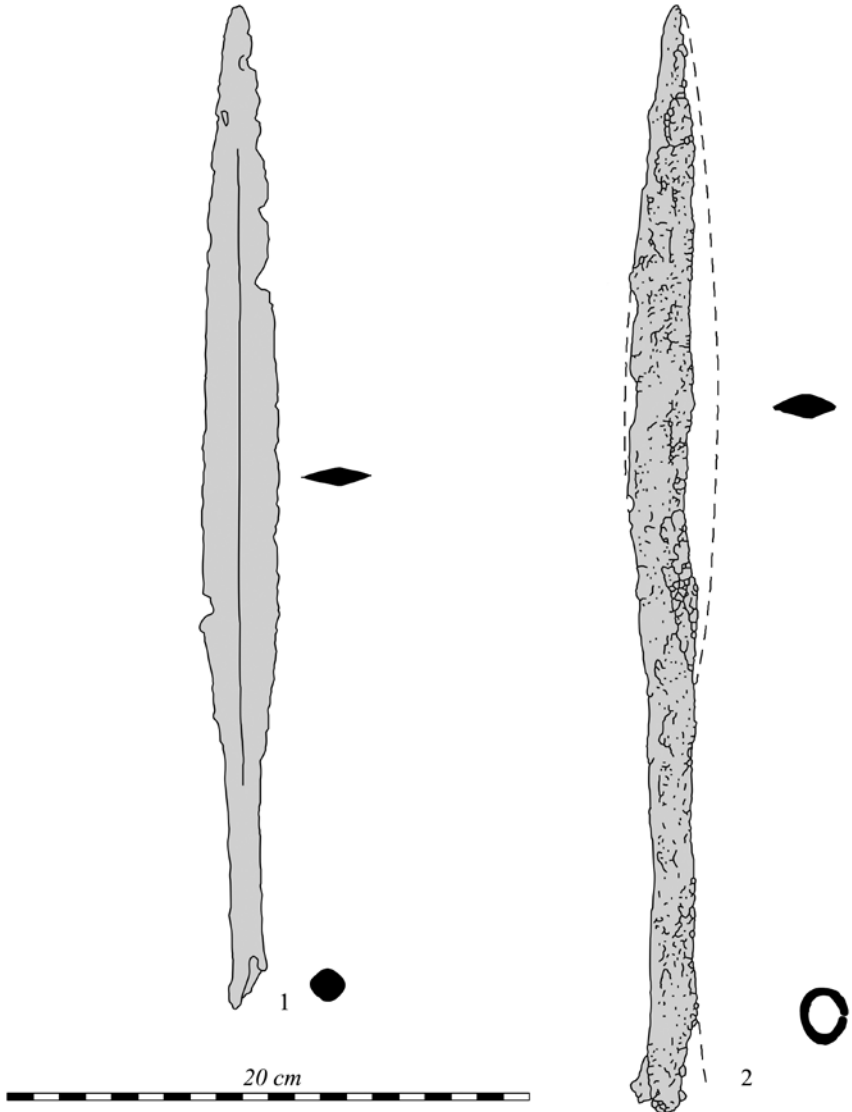


FIGURE 47 Spearheads of type P.III.B/1.c: 1. Košice-Šebastovce, grave No. 131 (Budinský-Krička – Točík 1991, 32–33, Taf. XVIII/28.); 2. Čataj 1. Zemanské-Gejzovce, grave No. 113 (Hanuliak – Zábojník 1982, 498; Szentpéteri 1993, 121.).

The first variant (P.III.C/1.e) is characterised by an extremely long, narrow blade with rhombic cross section and short socket (fig. 47), as typified by the spearhead from grave No. 422 of Devínska Nová Ves (fig. 49/4),<sup>191</sup> where two

<sup>191</sup> Eisner 1952, 97. tab. 40/8.

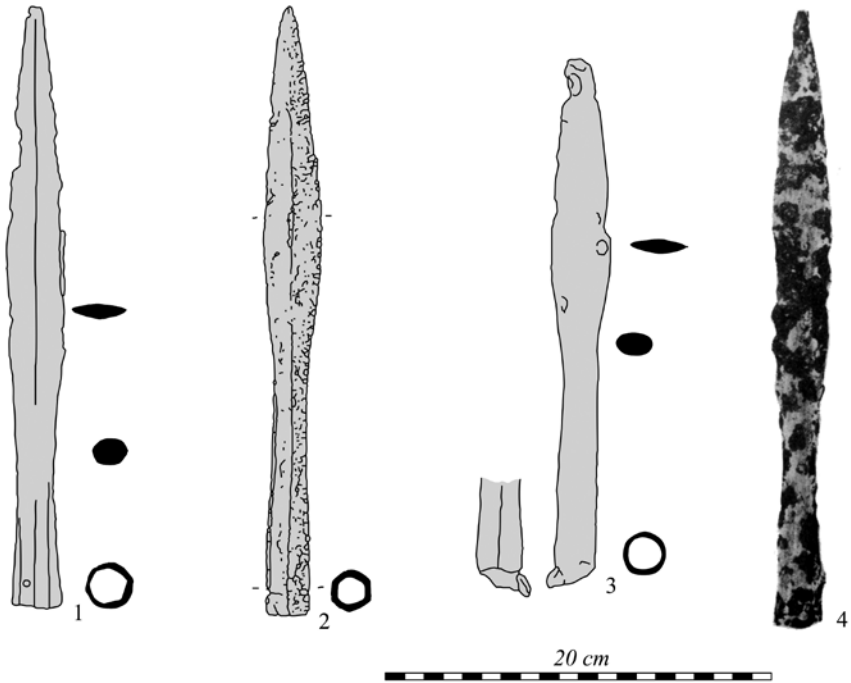


FIGURE 48 *Spearheads of type P.III.C (Egling-type):* 1. Koroncó-Bakonyér, 2. Čataj I, Zemanské-Gejzovce, grave No. 176 (Hanuliak – Zábójník 1982, 498; Szentpéteri 1993, 121.); 3. Bratislava-Devínska Nová Ves-A Tehel'ňa, grave No. 616 (Eisner 1952, 137, t. 65/8.); 4. Radvaň nad Dunajom-Žitavská Tôň, grave No. 11 (Čilinská 1963, 91, tab. VI/12.).

thirds of its length comprised the blade, whilst its socket is circular in cross section. The spearhead from grave No. 453 of Devínska Nová Ves (fig. 49/5) belongs to this type on the basis of the form of the blade.<sup>192</sup> The blade of this example is narrow and lenticular, and although it is longer than the socket its proportions are more balanced, and the cross section of the socket is circular. Both spearheads were found on the same site (Devínska Nová Ves cemetery) and date to the Late phase.

The second variant is characterised by its narrow lenticular blade with rhombic cross section, but the blade is longer than the socket of circular cross section (fig. 49). These spearheads have been identified with the so-called 'Pfullingen type'<sup>193</sup> but this relationship cannot be verified. The existence of the Pfullingen type amongst the weaponry of the Avar was first suggested

192 Eisner 1952, 103, t. 50/1.

193 Zábójník 1978, 196.

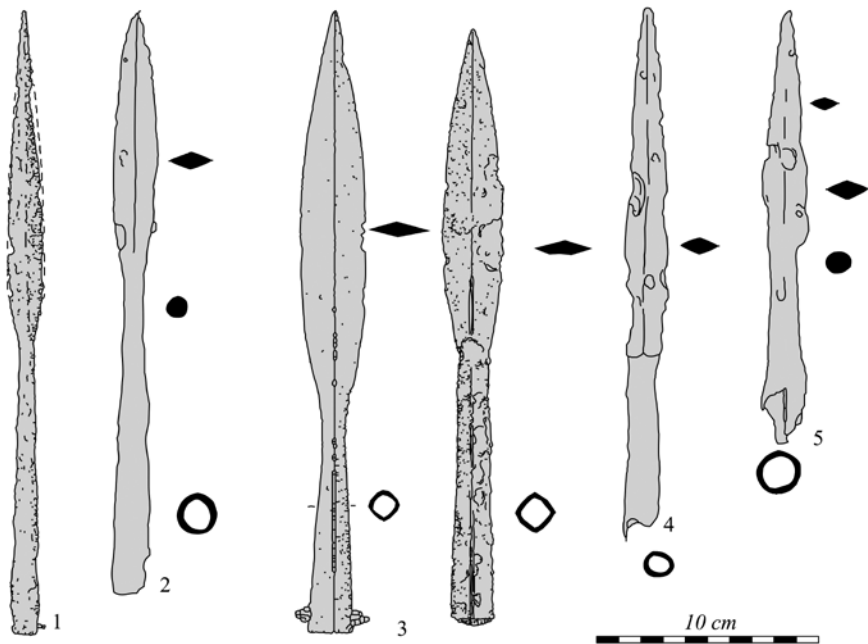


FIGURE 49 Spearheads of type P.III.c/3.e (Pfullingen-type) 1. Čataj I. Zemanské-Gejzove, grave No. 77 (Hanuliak – Zábajník 1982, 498.); 2. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 777 (Eisner 1952, 163, t. 84/6.); 3. spearheads of Pfullingen-type after Stein 1967, 4. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 422 (Eisner 1952, 97, t. 40/8.); 5. Bratislava–Devínska Nová Ves–A Tehel'ňa, grave No. 453 (Eisner 1952, 103, t. 50/1.).

by Frauke Stein and Jozef Zábajník,<sup>194</sup> who considered the spearheads from grave No. 77 from Čataj<sup>195</sup> (fig. 49/1) and grave No. 777 from Devínska Nová Ves<sup>196</sup> (fig. 49/2) as belonging to this group. However, according to these attributes, neither of these spearheads belong to the Pfullingen type (fig. 49/3), since its main criteria (the quadrangular cross section of the socket and the rivets with hemispherical head) does not appear on them. The spearheads of Pfullingen type are distributed only in southwestern Germany and Bavaria.<sup>197</sup>

The quadrangular cross section of the socket only appears on the spearhead from grave No. 131 at Košice–Šebastovce (fig. 47/1), which is extremely long (39.2 cm) and has a flat blade, but has proportions totally different from that

194 Zábajník 1978, 196.

195 Hanuliak – Zábajník 1982, 498.

196 Eisner 1952, tab. 84/6.

197 Stein 1967, 17.

of the Pfullingen type.<sup>198</sup> As a result, the Pfullingen type did not appear in the Carpathian Basin during the 8th century in its original form, although there is a spearhead type with similar attributes, and therefore can be considered a local variant of the western type. Such spearheads were mainly found on the northwestern periphery of the Avar settlement area. These spearheads are dated to the first half of 8th century.

The third variant is characterised by the equal length of the blade and socket, and a polygonal cross section of the socket (P.III.C/3.e) (map 18, fig. 48). These spearheads can be classified as part of the Central European spearheads known as 'Egling type'. The main characteristic of this type is the narrow lenticular blade, the cross section of the socket is octagonal, and the blade is often decorated with long parallel grooves.<sup>199</sup>

The Egling type was first identified among the Avar spearheads by Jozef Zábajník, who assigned the spearheads of grave No. 616 at Devínska Nová Ves<sup>200</sup> (fig. 48/3) and grave No. 53 at Bernolákovo (P.III.A/2.f)<sup>201</sup> to this type.<sup>202</sup> However, these spearheads share only some of the attributes of the Egling type (such as socket of octagonal cross section) and are otherwise very different from each other. The spearhead from grave No. 616 of Devínska Nová Ves has a narrow lenticular blade and narrow socket of circular cross section, the wings of which were bent next to each other (fig. 48/3).<sup>203</sup> The spearhead from grave No. 53 at Bernolákovo (fig. 44/5) has a short, lenticular blade and long circular socket, the end of which is closed by a looped ring, and is therefore classified as of type 'P.III.A/2.f'.<sup>204</sup>

If we use the definition of Garscha, only the spearheads from grave No. 176 at Čataj<sup>205</sup> (fig. 48/2) and grave No. 11 at Žitavska Tôň<sup>206</sup> (fig. 48/4) can be classified to this type, on the basis of their hexagonal cross section and the form of the blade. The spearhead from the Xántus János Museum of Győr (a stray find from the Koroncó site, fig. 48/1) also belongs to this type with its hexagonal cross section and narrow lenticular blade.<sup>207</sup>

198 This spearhead is dated to the 2nd stage of Late phase by cast bronze rectangular belt-mounts with griffon-decoration and hinged strap-end decorated by cornucopia (Budinský-Krička – Točík 1991, 32–33. Taf. xviii).

199 Stein 1967, 16.

200 Eisner 1952, 137, t. 65/8.

201 Kraskovská 1962, 436–437. tab. xi/1.

202 Zábajník 1978, 195–196.

203 Eisner 1952, 137, t. 65/8.

204 Kraskovská 1962, 436–437. tab. xi/1.

205 Hanuliak – Zábajník 1982, 498; Szentpéteri 1993, 121.

206 Čilinská 1963, 91. tab. vi/12.

207 Inventory number: XJM 53.310.1, collected by Sándor Gallus.

### 1.3.4 Lenticular Blade with Central Rib (Dorfmerking Type) (P.III.D)

This type is characterised by a broad lenticular blade with a central rib which is a continuation of the socket (map 19, fig. 50). These spearheads can be associated with the so-called 'Dorfmerking type' of the Merovingian cemeteries of Central Europe and Italy. Eleven spearheads belong to this group and are known mainly from the Early phase,<sup>208</sup> but its use probably continued into the Middle phase as suggested by the example from Bóly.<sup>209</sup>

The type was first identified amongst Avar weaponry by Attila Kiss at the cemetery of Kölked–Feketekapu 'A', where he first applied the terminology of Wolfgang Hübener, and dated the use of this type to the turn of the 6th and 7th century.<sup>210</sup> The spearhead from grave No. 5 of Csepel–Háros (fig. 50/3) is of particular interest, as its socket is still of quadrangular cross section.<sup>211</sup> The example from grave No. 250 at Kölked A is dated by its tripartite belt-set to the last quarter of the 6th and first third of the 7th century.<sup>212</sup> Spearheads of 'Dorfmerking type' can be regarded as of western Merovingian origin amongst the weaponry of the Early Avar period. Similar artefacts are well known from early medieval cemeteries of South Germany and Italy where it is dated to the turn of the 6th and the 7th centuries.

### 1.3.5 Openwork Spearheads (P.III.E)

The blade of openwork spearheads is usually broad, lenticular in shape and with a central rib. Their cross section is usually flat and lenticular. Openwork spearheads are extremely rare in the Avar-age Carpathian Basin (map 20,

208 Aradac–Mečka grave No. 72 (Nad1959, 61, 85, tab xviii/13; Dimitrijević – Kovačević – Vinski 1962, 9–12); Bóly–Sziebert puszta A grave No. 59 (Papp 1962, 179–180. xii.t. xv.t. 7); Budakalász–Dunapart grave No. 1474; Budapest XXI. Csepel–Háros grave No. 5 (Nagy 1998, 148, Taf. 100/1); Gyarmat–Királydomb (MRT 4. 1972. 112. 25. t. 1–5); Kölked–Feketekapu A grave No. 250 (Kiss 1996, 73, 233, 234, 418, Taf. 4/3, 469, Taf. 55/17); Környe grave No. 125 (Salamon – Erdélyi 1971, 26, Taf. 21/9); Környe stray find (MNM 69.1.487); Környe stray find (Salamon – Erdélyi 1971, 30, 56, 106, Taf. 28/5, 135, Taf. xviii/7); Környe stray find (MNM 69.1.66); Sombor–Kukula téglagyár (Gubitza 1909, 24; Csallány 1956, 1085, Dimitrijević – Kovačević – Vinski 1962, 59; Mrkobrad 1980, 152).

209 Bóly–Sziebert puszta A grave No. 59 (Papp 1962, 179–180. xii.t. xv.t. 7).

210 Kiss 1996, 234. Attila Kiss mainly used the data of Hübener (1972, 193–211).

211 Nagy 1998, 148, II. 108. Taf. 100/1. Spears of Dorfmerkingen type with quadrangular socket are known from the Merovingian cemeteries, such as: grave No. 3a of Niederstotzingen (Paulsen 1967a, Taf. 17, 5); Langenau, Kr. Ulm (Hübener 1972, Abb. 3/2); Merdingen, Kr. Freiburg (Garscha 1970, Taf. 84, 16); Donaueschingen, stray find (Buchta-Hohm 1996, Taf. 41/56); grave No. 342 of Weingarten (Roth – Theune 1995, 100, Taf. 129/4).

212 Kiss 1996, Taf. 55. Similar belt-sets are dated to the 7th South German phase by Ursula Koch (Koch 2001, 87).



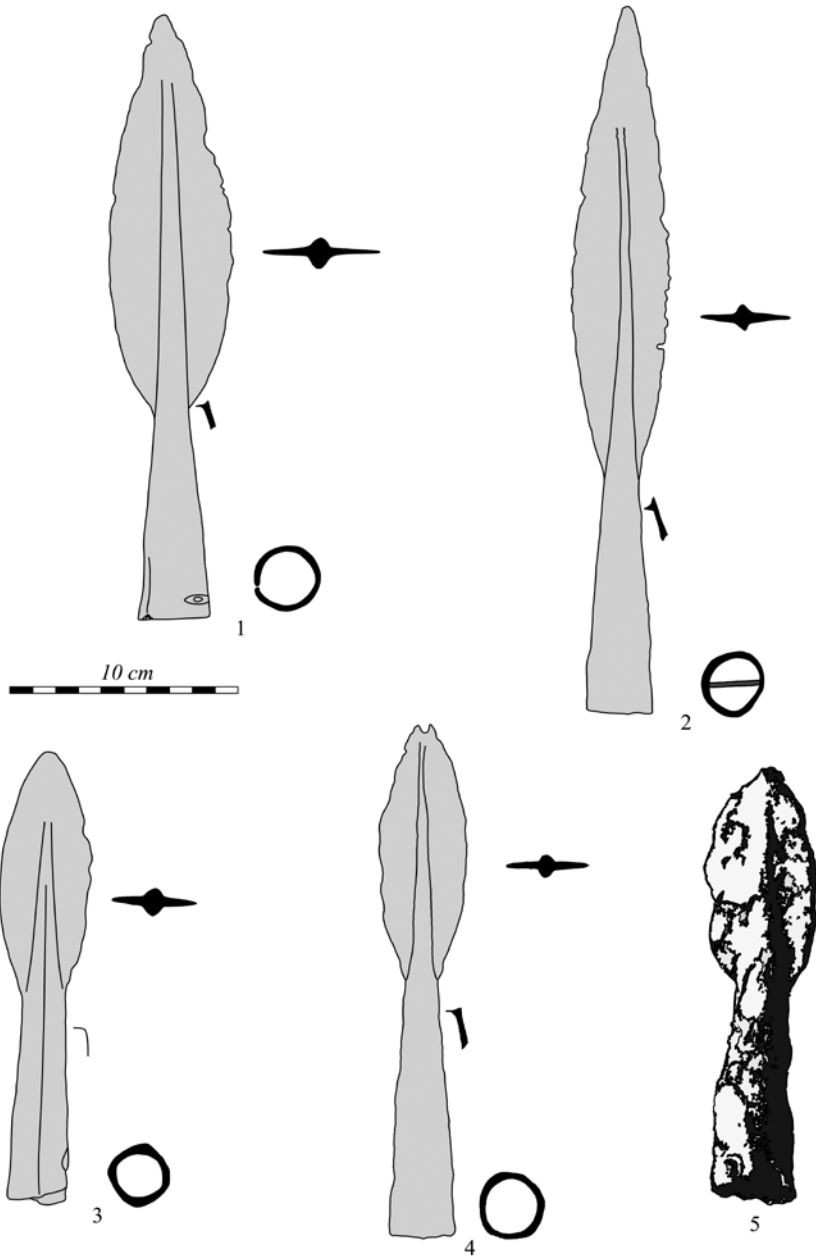


FIGURE 50 Spearheads of type P.III.D (Dorfmerking-type) 1. Környe, stray find (Salamon – Erdélyi 1971, 30, 56, 106, Taf. 28/5, 135.); 2. Környe, stray find (MNM 69.1.487; Salamon – Erdélyi 1971, 30, 56, 106, Taf. XVIII/7.); 3. Budapest XXI, Csepel-Háros, grave Nr. 5 (Nagy 1998, 148, Taf. 100/1.); 4. Budakalász-Dunapart, grave Nr. 1474; 5. Aradac-Mečka, grave Nr. 72 (Nađ 1959, 61, 85, tab XVIII/13; Dimitrijević – Kovačević – Vinski 1962, 9–12.).

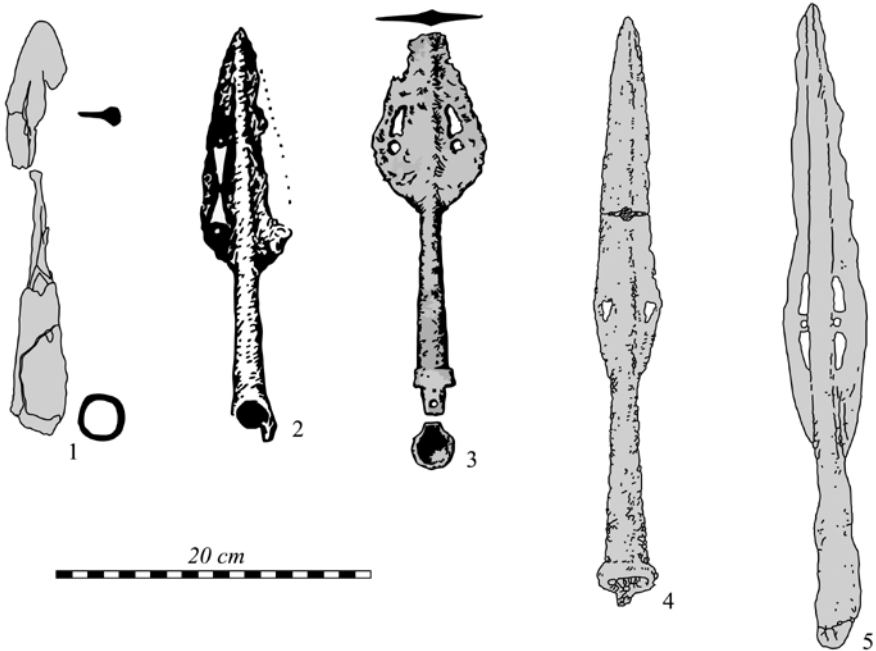


FIGURE 51 *Spearheads of type P.III.E (openwork spearheads)* 1. Kölked–Feketekapu B, grave No. 82 (Kiss 2001, 28, II. 42, Taf. 28, 9.); 2. Gâmbaş, stray find (Horedt 1958, 96, fig.9a/10–11.); 3. Gâmbaş, grave No. IX (Horedt 1958, 99., fig. 14/2, fig. 14/13.); 4. Teiuş, grave No. III (Horedt 1958, 104, Fig. 17/13.); 5. Kalaja Dalmaces (Albania) after Szentpeteri 1984, 243.

fig. 51),<sup>213</sup> and they are probably of symbolic significance, since such spearheads could not be used in battle. Two theories have developed to explain the openwork technique: 1. spear with flag,<sup>214</sup> 2. ostentatious weapon.<sup>215</sup> Only five such openwork spearheads are known from Avar-age burials, one of them was found in an Early period grave of Transdanubia (fig. 51/1),<sup>216</sup> and four of them were found in Transylvania and probably date to the Late phase (map 20, fig. 51/2–5).<sup>217</sup> In what follows, openwork spearheads of Transdanubia and

213 Gâmbaş, stray find (Horedt 1958, 96. fig. 9a/10–11) two examples; Gâmbaş grave No. IX (Horedt 1958, 99. fig. 14/2. és 14/13); Kölked–Feketekapu B grave No. 82 (Kiss 2001, 28, II. 42, Taf. 28, 9); Teiuş grave No. III (Horedt 1958, 104. fig. 17/13).

214 von Hessen 1971, 41; Bálint 2004a, 364.

215 von Hessen 1971, 41.

216 Kölked–Feketekapu B grave No. 82 (Kiss 2001, 28, II. 42, Taf. 28, 9).

217 Gâmbaş, stray find (Horedt 1958, 96. fig.9a/10–11) two examples; Gâmbaş grave No. IX (Horedt 1958, 99. fig. 14/2. and 14/13); Teiuş grave No. III (Horedt 1958, 104. fig. 17/13).

Transylvania will be presented separately, because they belong to different traditions.

Only one spearhead of the Transdanubian variant is known which is characterised by a lenticular blade and semicircular ajoures on both sides of the central rib. This single spearhead is dated to the Early phase, from grave No. 82 at the Kölked–Feketekapu B cemetery,<sup>218</sup> the blade of which has semicircular perforations situated next to the central rib (fig. 51/1). Similar spearheads are only known from Italy and South Germany during the 6th–7th century.<sup>219</sup> The analogy cited by Szentpéteri from Albania (Kalaja Dalmaces, fig. 51/5) probably belongs to the Italian group.<sup>220</sup> These spearheads are dated as contemporary with the Dorfmerking type (end of the 6th—first half of the 7th century).<sup>221</sup> This dating is verified by the German chronology of the Merovingian period<sup>222</sup> and the tripartite belt-set of grave No. 250 at Kölked–Feketekapu.<sup>223</sup>

The Transylvanian variant is characterised by a broad lenticular blade, the greatest width of which is in its lower third, the blade has a central rib which is an elongation of the socket, and is often closed by a looped ring pulled over it. The blade is decorated by various arrangements of openwork triangles and circles. Spearheads belonging to this type were found in Transylvania (fig. 51/2–5): grave No. IX at Gâmbaş<sup>224</sup> and Teiuş.<sup>225</sup> The example from Teiuş (fig. 51/4) has a narrower blade, and it is longer than the spearheads from Gâmbaş (fig. 51/2–3).

This type is only known from Transylvania (map 20), specifically from the valley of Maros (Mureş). Their chronology is a matter of some debate. József Szentpéteri compared these spearheads with rectangular belt-mounts with similar triangular openwork decoration which he regarded as a *tamga* (symbol of the clan).<sup>226</sup> This interpretation is problematic, since no such belt-mounts are known from Transylvania, with the distribution area of the spearheads and belt-mounts being quite different. The only datable find of this variant is found in a burial from Teiuş together with belt-set cast of bronze, suggesting a date in the Late phase (8th century).<sup>227</sup> The chronology of this type is therefore

218 Kiss 2001, 28, II. 42. Taf. 28/9.

219 See: von Hessen 1971, Abb. 1/1–4; the type is known from the cemetery of Trezzo sull'Adda, too; Roffia 1986, Taf. 6: 5. Their most recent study: Will 2007, 181–193.

220 Nopča 1912, Abb. 85. (after Szentpéteri 1984, 243).

221 Kiss 1996, 234.

222 The 7th phase (580–600) of Ursula Koch (2001, 63, 75).

223 Kiss 1996, Taf. 55. Similar belt-sets were dated to the 7th phase in Germany: Koch 2001, 87.

224 Horedt 1958, Abb. 2/5. and Abb. 14/13.

225 Horedt 1958, Abb. 17/13.

226 Szentpéteri 1984, 240–243. Taf. IV.

227 Horedt 1958, 104. fig. 17/13.

obscure, although the find of Gâmbaş suggests that they date to the second half of the Avar Age (probably Late phase). There is no connection with the openwork spearheads of the Italian group.

#### 1.4 *Triangular Spearheads (P.IV)*

Spearheads with triangular blades are not common during the Avar Age, with only 29 such artefacts known from Avar-age burials of the Carpathian Basin. These spearheads are chronologically evenly distributed, with ten examples dating to the Early phase, two pieces belonging to the Middle phase and 17 examples dating to the Late phase. Such spearheads were used across all regions of the Carpathian Basin but are only known in small quantities.

Spearheads with triangular blades can be divided into two types, the first type being those spearheads with a narrow triangular blade (P.IV.A) which are similar to the reed-shaped spearheads, their distinguishing characteristic being that the edges of their blade is straight and not curved. The second type is characterised by a broad triangular blade (P.IV.B), the blade width of which is much longer than the width of the socket.

##### 1.4.1 Spearheads with Narrow Triangular Blade (P.IV.A)

These spearheads are characterised by their narrow, triangular blade: the blade width being between 2.5 and 3 cm (map 21, figs. 52–53).<sup>228</sup> Their proportions and size can vary considerably, with the longest spearhead of this type at 51 cm long (fig. 52/1),<sup>229</sup> while the shortest is less than 20 cm. Four examples are dated to the Early phase, the majority of which were found in Transdanubia

228 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 524 (Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 842 (Eisner 1952, 181–182, Obr. 89); Budakalász–Dunapart grave No. 452; Košice–Šebastovce grave No. 67 (Budinský–Krička – Točík 1991, 18–19, Taf. VI/21); Košice – Šebastovce grave No. 94 (Budinský – Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský–Krička – Točík 1991, 25–26, Taf. XII/7); Košice–Šebastovce grave No. 225 (Budinský–Krička – Točík 1991, 47–48. Taf. XXI–XXX. Taf. XXX/11); Kölked–Feketekapu A grave No. 211 (Kiss 1996, 64–65. Taf. 49/17); Mali Idoš grave No. 70 (Gubitza 1907, 357–358; Kovrig 1955b, 169; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 98. 152. LXXX/1, 13); Mártély–Ómártély grave No. B (Hampel 1905, II. 107–108, III. Taf. 85/15); Mór–Akasztódomb (Török 1954, 57. XII. tábla 26); Söjtör–Petőfi utca grave No. 12 (Szőke 1994a, 10. tábla 1); Tiszafüred–Majoros grave No. 272 (Garam 1995, Abb. 16. Taf. 79, Taf. 177/1); Tiszafüred–Majoros grave No. 809 (Garam 1995, 99, Taf. 184); Tiszafüred–Majoros grave No. 1197 (Garam 1995, 142. Abb. 57. Taf. 159. Taf. 188/1).

229 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 524 (Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54).

(map 21),<sup>230</sup> while most of the spearheads belonging to this type are dated to the Late phase (ten examples, mainly from Slovakia).<sup>231</sup>

The hooked spearheads with extra long and narrow triangular blade with rhombic cross section comprise a special variant (P.IV.A/1.e) of this type, represented by just two examples (fig. 52/1). The common characteristics of this type are the short, closed socket with two short projections of oval cross section (hooks). The type are usually called 'hooked spears' (*'Hakenlanze'* in German), while no winged spearheads are known from Late Avar burials of the Carpathian Basin. The problems related to hooked and winged spears will be discussed in chapter VI.3 in detail. The only spearhead with similar features is a hooked spearhead from grave No. 524 at Devínska Nová Ves (fig. 52/1),<sup>232</sup> while the blade of the spearhead from grave No. 12 at Söjtör<sup>233</sup> (fig. 52/2) is very similar in its shape, proportions, and size (40 cm in length) to the example from Devínska Nová Ves. There are no traces of wings or hooks on the socket of this spearhead, and therefore it cannot be classified as either a winged or hooked spearhead despite its blade and proportions being very similar to the only known hooked spearhead. Nonetheless, similarities in the proportion of the spearhead might suggest the same date.

The hooked spearhead from grave No. 524 at Devínska Nová Ves<sup>234</sup> has a long, narrow triangular blade, with angular shoulder and its cross section is rhombic (fig. 52/1). The socket is closed and shorter than the blade. Two projections are present on the lower part of the socket, both being 2.3 cm in length and 1.2 cm wide and of rectangular cross section. The length of the spearhead is 51 cm.

230 Budakalász–Dunapart grave No. 452; Kölked–Feketekapu A grave No. 211 (Kiss 1996, 64–65. Taf. 49/17); Mali Idoš grave No. 70 (Gubitza 1907, 357–358; Kovrig 1955b, 169; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 98. 152. LXXX/1, 13); Mór–Akasztódomb (Török 1954, 57. XII. tábla 26).

231 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 524 and 842 (Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54); Košice–Šebastovce grave No. 67, 94 and 225 (Budinský–Krička – Točík 1991, 18–19, Taf. VI/21; 25–26, Taf. XII/7, 47–48. Taf. XXIX–XXX, Taf. XXX/11; Budinský–Krička – Točík 1984, 174, 176, Obr. 2/4); Mártély–Ómártély grave No. B (Hampel 1905, 11: 107–108, III. Taf. 85/15); Söjtör–Petőfi utca grave No. 12 (Szőke 1994a, 10. tábla 1); Tiszafüred–Majoros grave No. 272, 809 and 1197 (Garam 1995, Abb. 16. Taf. 79, Taf. 177/1, 99, Taf. 184, 142. Abb. 57. Taf. 159. Taf. 188/1).

232 Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54.

233 Szőke 1994a, 10. tábla 1.

234 Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54.

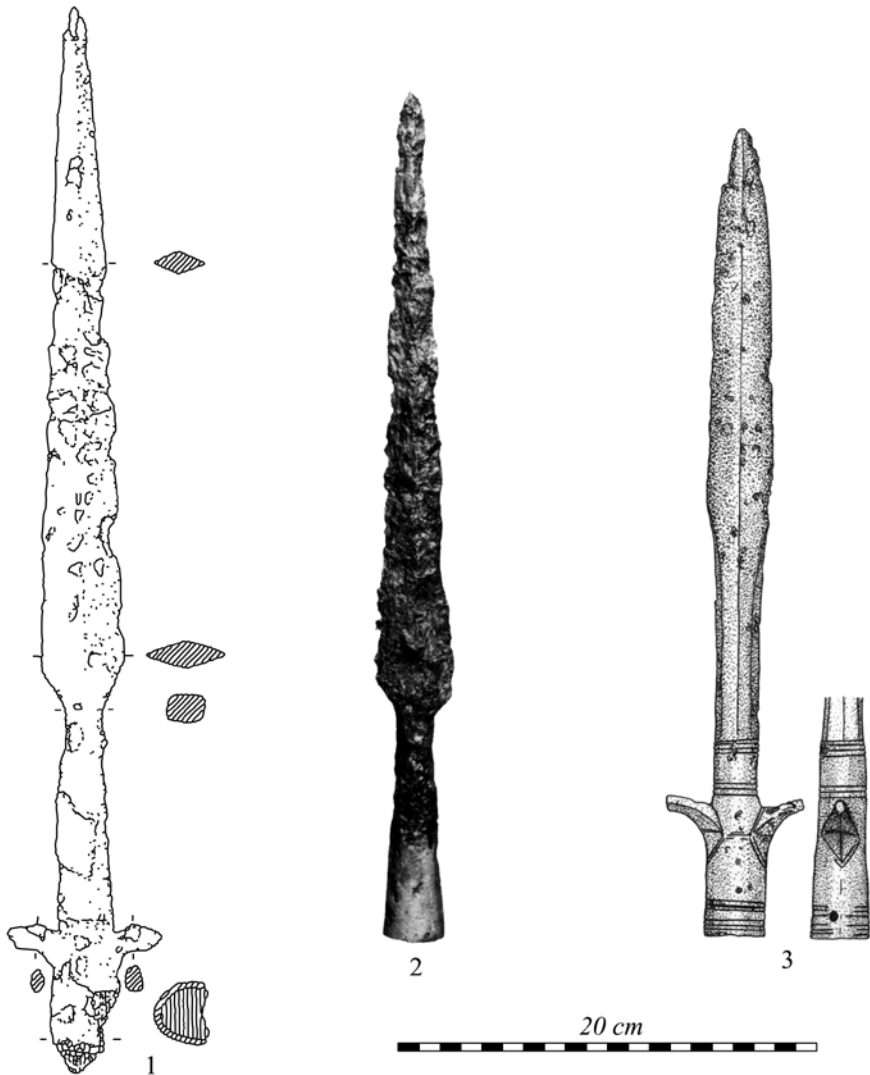


FIGURE 52 Spearheads of type P.IV.A/1 (Hooked spears) 1. Bratislava–Devínska Nová Ves–A Tehelňa, grave No. 524 (Eisner 1952, 119–120, Obr. 71/1.) (drawing of M. Husár); 2. Söjtör–Petőfi utca, grave No. 12r (Szőke 1994a, 10. tábla 1.); 3. Barga, grave No. 8 (after Koch 1982.).

This spearhead was described and studied by Ján Eisner<sup>235</sup> and László Kovács.<sup>236</sup> According to Kovács it belonged to the group of so-called ‘Stollenlanzen’ (the Swiss name for hooked spearheads), and dated it to the end of the 7th and

<sup>235</sup> Eisner 1934; Eisner 1952, 119–120.

<sup>236</sup> Kovács 1979, 98, 104.

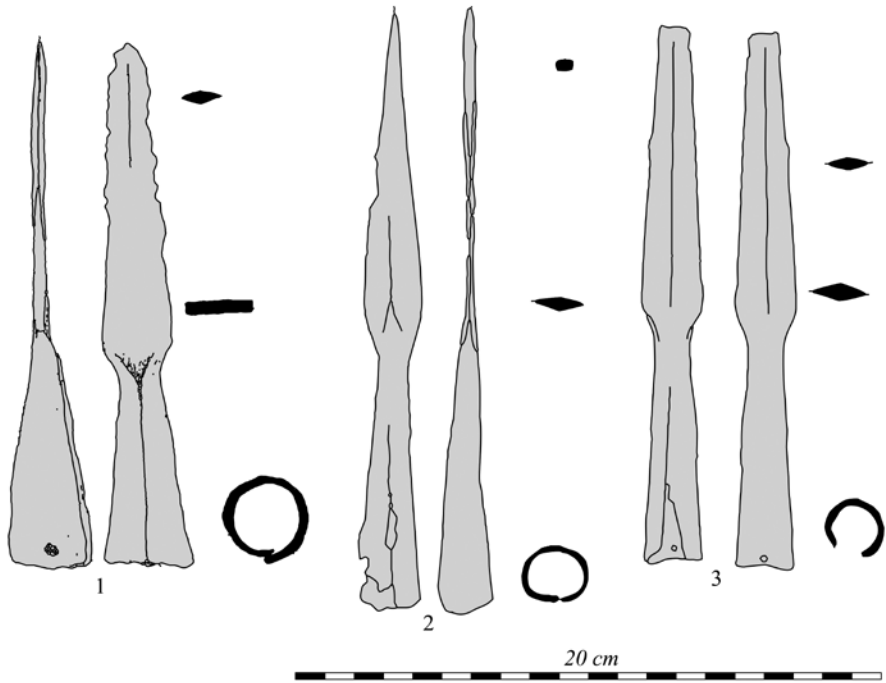


FIGURE 53 *Spearheads of type P.IV.A/3*: 1. Mór–Akasztódomb (Török 1954, 57, XII. tábla 26.); 2. Košice–Šebastovce, grave Nr. 225 (Budinský-Krička – Točík 1991, 47–48, Taf. XXX/n.); 4. Košice–Šebastovce, grave Nr. 67 (Budinský-Krička – Točík 1991, 18–19, Taf. VI/21.).

beginning of the 8th century, based on the Late Avar cast belt-set found in the burial.<sup>237</sup> The spearhead from Devínska Nová Ves was also assigned to these hooked spearheads (*‘Hakenlanzenspitze’*) by Christoph Steinacker (fig. 52/3).<sup>238</sup>

This spearhead is dated by a belt-set cast of copper alloy composed of shield-shaped mounts of circular flat-tendril ornament and strap-end with flat-tendril ornament<sup>239</sup> which is usually dated to the second half of the 8th century according to the relative chronology of the Late phase (LA 3). This spearhead was also found together with a long seax (*‘Langsax’* in German) the

237 Kovács 1979, 104, footnote No. 60: he used the book of Moosbrugger-Leu (1971, 90–92) who dated these spears to the 6–7th century. It is important to note, that Peter Paulsen (1969, 295) dated the same spearheads to the 8th century.

238 Steinacker 1998, 14.

239 Eisner 1952, obr. 52–53.

tip of which is in the line of its edge, and thus it cannot be regarded as an early variant of its type.

However, most of the spearheads of type P.IV.A do not belong to such a special variant, their main characteristic being the equal length of the blade and socket, and the width of the blade usually does not exceed that of the socket either. The cross section of the blade is always rhombic, the only exception being the spear from grave No. 225 from Košice–Šebastovce,<sup>240</sup> the blade of which thickens and becomes of quadrangular cross section (fig. 53/2), while the blade of the spear from grave No. 67 from the same site<sup>241</sup> (fig. 53/3) is of rhombic cross section over its entire length.

#### 1.4.2 Spearheads with Broad Triangular Blade (P.IV.B)

The blade is triangular, its edges are at an acute angle, its cross section is flat, but can occasionally be triangular, rhombic or lenticular. The blade and socket length is usually equal, and the blade is wider than the socket (map 22, fig. 54).

Altogether eleven such spearheads are known from the Avar-age Carpathian Basin,<sup>242</sup> two of which are dated to the Early phase,<sup>243</sup> one to the Middle<sup>244</sup> and the majority (eight examples) belong to the Late phase.<sup>245</sup>

240 Budinský-Krička – Točík 1991, 47–48. Taf. XXIX–XXX; Taf. XXX/11.

241 Budinský-Krička – Točík 1991, 18–19, Taf. VI/21.

242 Aiud grave No. 111 (Horedt 1956, 396; Horedt 1958, 92. fig. 10/2 and 10/15); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 416 (Eisner 1952, 95–96, Obr. 47/5–6); Košice–Šebastovce grave No. 48 (Budinský-Krička – Točík 1991, 14–15, Taf. II/1); Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. XXVII–XXIX); Košice–Šebastovce grave No. 228 (Budinský-Krička – Točík 1991, 48–49, Taf. XXX/6); Košice–Šebastovce grave No. 321 (Budinský-Krička – Točík 1991, 64–65; Taf. XLIV/7); Kővágószőlős–Tüskési Dűlő (Kiss 1977, 66. Pl. XXIV); Morávský Sv. Ján (Eisner 1933–34, 186; Eisner 1941, 379–380; Čilinská 1984, 163–170); Tiszafüred–Majoros grave No. 395 (Garam 1995, 54, Abb. 23, Taf. 178); Tiszafüred–Majoros grave No. 423 (Garam 1995, 57, Abb. 24, Taf. 90, Taf. 178/1); Tiszafüred–Majoros grave No. 630 (Garam 1995, 82, Taf. 108, Taf. 182/1).

243 Aiud grave No. 111 (Horedt 1956, 396; Horedt 1958, 92. fig. 10/2 and 10/15); Tiszafüred–Majoros grave No. 395 (Garam 1995, 54, Abb. 23, Taf. 178).

244 Tiszafüred–Majoros grave No. 630 (Garam 1995, 82, Taf. 108. Taf. 182/1).

245 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 416 (Eisner 1952, 95–96, Obr. 47/5–6); Košice–Šebastovce grave No. 48, 221, 228 and 321 (Budinský – Krička – Točík 1991, 14–15, Taf. II/1; 46–47; Taf. XXVII–XXIX, 48–49, Taf. XXX/6, 64–65; Taf. XLIV/7); Kővágószőlős–Tüskési Dűlő (Kiss 1977, 66. Pl. XXIV); Morávský Sv. Ján (Eisner 1933–34, 186; Eisner 1941, 379–380; Čilinská 1984, 163–170); Tiszafüred–Majoros grave No. 423 (Garam 1995, 57, Abb. 24. Taf. 90. Taf. 178/1).



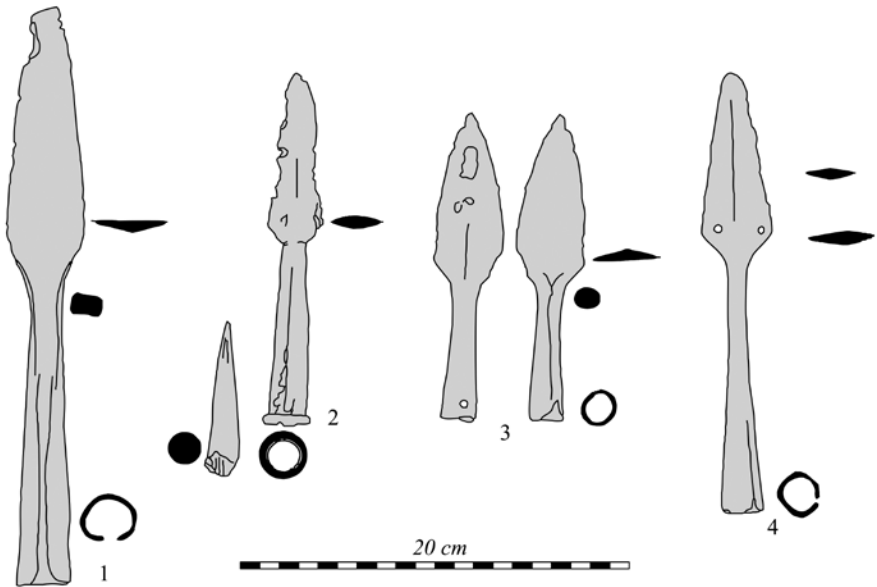


FIGURE 54 Spearheads of type P.IV.B: 1. Košice–Šebastovce, grave No. 228 (Budinský-Krička – Točík 1991, 48–49, Taf. xxx/6.); 2. Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský-Krička – Točík 1991, 25–26, Taf. xii/7.); 3. Košice–Šebastovce, grave No. 321 (Budinský-Krička – Točík 1991, 64–65, Taf. xliiv/7.); 4. Košice–Šebastovce, grave No. 48 (Budinský-Krička – Točík 1991, 14–15, Taf. ii/1.).

The spearhead from grave No. 228 at Košice–Šebastovce<sup>246</sup> is a unique example with a blade of triangular cross section and its neck being of rectangular cross section (fig. 54/1). This spearhead's socket is open. A spearhead with a similar blade but smaller in size, is known from grave No. 321 in the same cemetery (fig. 54/3).<sup>247</sup> The blade of a spearhead from grave No. 423 at Tiszafüred–Majoros is dated by cast bronze belt-set (strap-end and rectangular mounts with tendril ornaments) to the 1st stage of the Late phase.<sup>248</sup>

The spearhead from grave No. 48 at Košice–Šebastovce is of particular interest,<sup>249</sup> since its blade was pierced on both sides (fig. 54/4). The blade is triangular in shape, its cross section is lenticular, its neck is long and narrow

<sup>246</sup> Budinský-Krička – Točík 1991, 48–49, Taf. xxx/6.

<sup>247</sup> The length of the spearhead is only 17 cm (Budinský-Krička – Točík 1991, 64–65; Taf. xliiv/7).

<sup>248</sup> Garam 1995, Taf. 90. Taf. 178/1.

<sup>249</sup> Budinský – Krička – Točík 1991, 14–15, Taf. ii/1.

and its socket is open. A similar spearhead was depicted on the 2nd gold jar of the 'Nagyszentmiklós' hoard on the representation known as the 'victorious prince' holding a flagged spear with rhombic, pierced blade on its shoulder.<sup>250</sup> Similar spearheads with pierced blade are only known from the so-called 'forest-steppe' variant of the Saltovo-Majaki culture, mainly from cremation burials, although their shape is somewhat different: the blade being broad and lenticular in shape with a central rib.<sup>251</sup>

The spearheads with long and narrow neck (P.IV.B/2) comprise a distinct variant of the triangular spearheads: their socket is extremely long, the socket-wings are bent next to each other, and the blade is short (one third of the whole length). The blade is broad and triangular in shape, its cross section is flat and rhombic. Such spearheads are known from grave No. 757 at Tiszafüred–Majoros which is dated to the Middle phase by its stamped belt-set with a strap-end of interlace ornament.<sup>252</sup> The function of this variant can be interpreted as a throwing weapon (javelin).

### 1.5 *Javelins (P.V)*

The weapons of this group do not belong to either spears or to arrowheads but comprise a transitional group. Their common characteristics are their small size (10–19 cm) and extremely narrow socket (1–1.5 cm).<sup>253</sup> These weapons can be identified as javelins as consequence of their physical properties (map 23, fig. 55).

250 On Avar-age spear-representations: (Bálint 2004a, 359; Husár 2007, 29–41; Fancsalszky 2007) The description of 2nd gold flask of the hoard: (Gschwantler 2002, 15; Bálint 2004a, 424) Csanád Bálint cited the openwork spears of Transylvanian group and the representation of the gold solidus of Tiber III (698–705) as analogy for the spear-representation of Nagyszentmiklós (Bálint 2004a, 364).

251 These spears are different from the spearhead of grave No. 48 of Košice–Šebastovce and the representation of 2nd gold flask of 'Nagyszentmiklós' hoard, since their lenticular blade is centrally ribbed. (Miheev 1985, 118. ris. 9, 119. ris. 10/12, 120. ris. 11; Aksenov – Miheev 2006, ris. 40/1, ris. 63/8. ris. 72/2).

252 Garam 1995, Taf. 117.

253 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 200 (Eisner 1952, 60, Obr. 28/6); Komárno–8. Shipyard grave No. 85 (Trugly 1987, 271–272. Taf. XXVI–XXVIII. Taf. XXVI/13); Košice–Šebastovce grave No. 58 (Budinský-Krička – Točík 1991, 17–18, Taf. v); Mosonszentpéter–Kavicsbánya grave No. 1 (Sótér 1885, 202); Mosonszentpéter–Kavicsbánya grave No. 3 (Sótér 1885, 202); Mosonszentpéter–Kavicsbánya grave No. 4 (Sótér 1885, 202); Mosonszentpéter–Kavicsbánya grave No. 5 (Sótér 1885, 202); Regöly–Kupavár grave No. 108 (Kiss – Somogyi 1984, 134–135. 75. tábla 15); Valalíky–Všechsvätých grave No. 46/83 (Zábojník 1995, Taf. III; Husár 2005, Tab. 12/13).

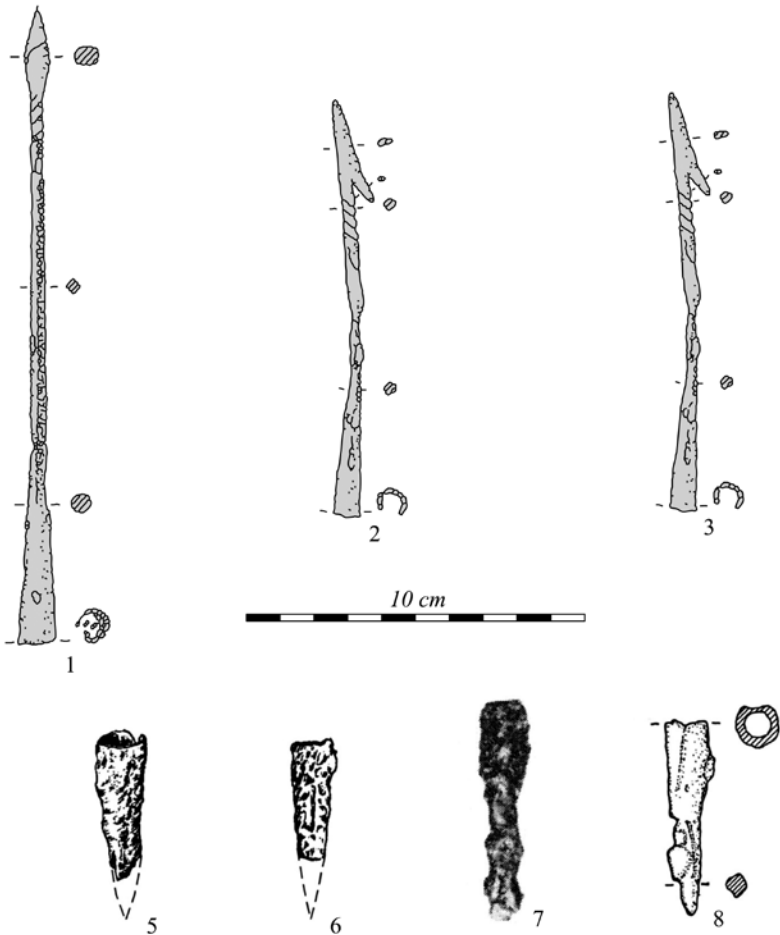


FIGURE 55 *Javelins and ferrules: 1. Valalíky–Všechsvätých, grave No. 46/83 (Zábojník 1995, Taf. III; Husár 2005, Tab. 12/13.); 2. Košice–Šebastovce grave No. 58 (Budinský-Krička – Točík 1991, 18, Taf. 5/7); 3. Košice–Šebastovce grave No. 162 (Budinský-Krička – Točík 1991, 38, Taf. XXI/11/3); ferrules: 4. Valalíky–Všechsvätých grave No. 10; 5. Želovce grave No. 172; 6. Želovce grave 616; 7. Štúrovo grave No. 38; 8. Štúrovo grave No. 258 (after Husár 2005, Tab. 12.).*

One of the most important weapon finds from the Late Avar period is the unique javelin from grave No. 46/83 at Valalíky–Všechsvätých (fig. 55/1). This weapon is characterised by its short rhombic blade, long, twisted neck and its narrow socket. This weapon is similar to the ‘angon’ known from Merovingian Western and Central Europe, though its blade is without hooks and its size is much smaller than that of the angos: its length is only 19 cm, the length of the short, rhombic blade is 2.5 cm, and its width is 0.8 cm. The neck of the weapon

is long, narrow, its cross section is quadrangular and twisted directly under the blade. The length of the neck is 12.2 cm, the socket is short and narrow, its length is 4.2 and its diameter is 1.1 cm.<sup>254</sup> This weapon can surely be regarded as a throwing weapon, its form and size being without analogy amongst Avar-age weaponry.

Another form of javelin is the socketed, hooked 'arrowhead'. These are more likely true javelins based on their length, which is longer than 10 cm (fig. 55/2–3). All of the listed weapons belong to this group except for the above-mentioned weapon from Valalíky. Similarly long arrowheads are usually asymmetric with beard only on one side which would result in their aerodynamic characteristics differing from those of arrowheads.

## 2 Ferrules

Ferrules are only known from Late Avar cemeteries, and were first identified by Anton Točík in the cemetery of Štúrovo.<sup>255</sup> This research was continued by Martin Husár in his MA thesis on early medieval polearms in Slovakia.<sup>256</sup>

Ferrules are usually small in size and quite simple artefacts, with all of the three known examples being made from an iron plate bent into conical shape with an average length of just 6 cm (fig. 55/4–8). The significance of these artefacts, however, is great since their position in the burial can help to determine the original length of the shaft which usually decayed in the burial. As a result of these observations the length of the shaft of the spear from grave No. 38 was originally 160 cm,<sup>257</sup> while that of grave No. 154 was only 130 cm.<sup>258</sup> There is indication for the original shaft length of the spear from grave No. 258.<sup>259</sup> This information on shaft length suggests that these pieces were not originally used as cavalry thrusting weapons, since the shafts of cavalry lances are usually longer (more than 2 m). It is important to note, that all three spearheads associated with ferrules were lenticular, their length was 30 cm, and thus could be used as infantry weapons.

254 Husár 2014, 71–72.

255 Točík 1968b, 20–21.

256 Husár 2005. Husár 2008, 457–470.

257 Točík 1968b, 20–21. Taf. XX/20.

258 Točík 1968b, Taf. XXXIV/23.

259 Točík 1968b, Taf. LI/14.

### 3 Shafts

Only 15 early medieval and 12 Avar-age wooden samples have been examined for determining the material from which spear shafts were made, all of them from Slovakia. Research in this field is thanks to E. Hajnalová, who studied archaeo-botanical remains (mainly wood) during the 1980s, which included the remains of several spear shafts.<sup>260</sup> Martin Husár used the identifications of Hajnalová for a combined analysis of the archaeological and botanical evidence for traces of northern connections amongst Late Avar cemeteries along the Danube.<sup>261</sup>

The wooden material of the shaft was identified in the following cases:

	Site	Grave No.	Wood species	Reference
1	Komárno–Shipyard	30	birch ( <i>Betula</i> )	Trugly 1987, 256, Abb. 3, Taf. v/2
2	Komárno–Shipyard	63	beech ( <i>Fagus silvatica</i> )	Hajnalová 1987, 382
3	Komárno–Shipyard	85	beech (?) ( <i>Fagus silvatica</i> )	Hajnalová 1987, 382
4	Komárno–Shipyard	87	beech ( <i>Fagus silvatica</i> )	Hajnalová 1987, 382
5	Komárno–Shipyard	101	silver fir ( <i>Abies alba</i> )	Trugly 1993, 194, Abb. 8, Taf. v/7
6	Komárno–Shipyard	118	silver fir ( <i>Abies alba</i> )	Trugly 1993, 201, Taf. xxiv/5
7	Komárno–Shipyard	129	apple subfamily (cf. <i>Pomoideae</i> )	Trugly 1993, 207, Abb. 29, Taf. xxxvi/4
8	Komárno–Shipyard	130	apple subfamily (cf. <i>Pomoideae</i> )	
9	Komárno–Shipyard	132	silver fir ( <i>Abies alba</i> )	Trugly 1993, 209, Abb. 32, Taf. xli/10
10	Komárno–Shipyard	94	oak	Husár 2008, 461
11	Košice–Šebastovce	232	unidentified broadleaf	Husár 2008, 461
12	Radvaň nad Dunajom–Virt	62	unidentified pine	Husár 2008, 461

260 Hajnalová 1987, 381–384; Hajnalová 1993, 347–349; Hajnalová – Mihályiová – Hajnalová 2006, 87–92.

261 Husár 2008, 3–14.

The wooden material of the spear shaft was determined by its physical properties and function. Hard and flexible wood (like beech or oak) were used for thrusting weapons, while for javelins lighter and flexible wood (birch or pine) was more suitable, such as in the case of the spearheads from grave No. 30 and 132 from Komárno–Shipyard which were probably used as throwing weapons.

Husár utilised recent landcover maps of Slovakia to suggest that except for oak all of the wooden material had to be imported to the Danube from the northern mountains. This would certainly have been true for silver fir and pine species. The silver fir only lives in mountainous regions, its European distribution covering the Alps and Carpathians, though this species is present in some lower locations like the Kőszeg-hills and Órség regions of Hungary (together with beech),<sup>262</sup> the Carpathians and the Austrian Alps.

The situation is less clear in the case of beech, since it grows in the elevation between 600 and 1000 m, and even submontane beech forests are known to have been mixed with oak. These species are known amongst the upland areas of Hungary, like the Northern and Transdanubian Mountains, Mecsek and Órség regions.<sup>263</sup> Besides the northern Slovakian mountains, a possible place of origin for beech could be the Gerecse Mountains (40 km from Komárno). Apple and oak are typical of the plains and thus could have been of local origin.

The length of the shaft is only known in 15 cases, based on observations of wooden remains, and in the case of the Štúrovo cemetery on the basis of the position of the ferrules.

This information should mostly indicate minimal values, since the spear shaft could have been broken during the funeral, and such observations could also have been affected by various factors during the course of excavation. As a rule, the length of spear shafts found in burials with horses is usually longer, while those spearheads associated with ferrules have usually short shafts. The average length of spear shafts from burials with horses is around 2 m, and they were probably used as thrusting weapons.

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262 Kevey 2006, 49.

263 Kevey 2006, 40–55.

Site	Grave No.	Shaft length (cm)	Reference
1 Čierný Brod	2	135	Točík 1992, 9–12., Obr. 7
2 Devínska Nová Ves		170	
3 Devínska Nová Ves	95	200–210	Eisner 1952, 30–31, Obr. 28/1
4 Devínska Nová Ves	107	178	Eisner 1952, 36, Obr. 28/5
5 Devínska Nová Ves	124	240–260	Eisner 1952, 41–42, Obr. 28/4
6 Devínska Nová Ves	131	200	Eisner 1952, 43–44, Obr. 20
7 Devínska Nová Ves	132	220	Eisner 1952, 44, Obr. 20/4
8 Devínska Nová Ves	147	195	Eisner 1952, 47–48, Obr. 21
9 Devínska Nová Ves	497	180	Eisner 1952, 113–114
10 Devínska Nová Ves	524	180	Eisner 1952, 119–120, Obr. 71/1
11 Devínska Nová Ves	597	8.5	Eisner 1952, 132–133, t. 72/1
12 Košice–Šebastovce	94	8.6	Budinský-Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský-Krička – Točík 1991, 25–26, Taf. xii/7
13 Štúrovo	38	160	Točík 1968b, 20–21., Taf. xx/20
14 Štúrovo	154	130	Točík 1968b, 44–45., Taf. xxxiv/23
15 Tiszafüred–Majoros	40	85	Garam 1995, 13, Abb. 4

#### 4 Representations of Polearms

Representations of Avar-age polearms are primarily known from the Late phase, with only an Italian representation suitable for use as an analogy for Early Avar spears. The silver plate of Isola Rizza presents a mounted warrior wearing lamellar armour and banded helmet (*'Spangenhelm'*) and using a long lance which is being thrust through two footsoldiers.<sup>264</sup> The rider does not use stirrups on the representation which could be a chronological argument, but it

264 von Hessen 1968, 47, Abb. 3, 68, Taf. 41–43; The representation was first used as an analogy for the heavy cavalry of the Avars by Joachim Werner (1971, 110–111). The hoard is dated to the middle of the 6th century, the rider being identified as a Byzantine cataphract (von Hessen 1968, 68).

could also be the result of an artistic tradition.<sup>265</sup> The length of the spear shaft compared to the length of the horse can be estimated to be around 5–6 m,<sup>266</sup> around the same as the length of Byzantine ‘kontos’.<sup>267</sup> Schematic representations of lances are also known from Inner Asian petroglyphs.<sup>268</sup>

Representations of Late Avar spears and lances were studied by Csanád Bálint in connection with the image of the ‘victorious leader’ of the Nagyszentmiklós treasure,<sup>269</sup> the same subject also being addressed latterly by the Slovakian scholar Martin Husár,<sup>270</sup> while Gábor Fancsalszky studied the Late Avar belt-mounts with human representations.<sup>271</sup> The topic is well studied considering its somewhat scarce sources, and therefore it will be discussed only briefly.

Only five representations of mounted warriors with lances are known from the Late Avar period. The use of these representations for the study of weapon’s history is problematic, however, since such art can follow its own logic and traditional image types rather than necessarily reality. All of the known representations are very small scale, the largest amongst them being only 6.8 cm high,<sup>272</sup> and they are therefore necessarily schematic.

Representation of a mounted warrior with lance in his left hand is known from the cast strap-end from grave No. 71 at Komárno–Shipyard,<sup>273</sup> the strap-end is covered by flower motifs on a pointed background dated to the second half of the 8th century by Jozef Zábójník.<sup>274</sup> Similar representations are known from grave ‘A’ of the cemetery of Balatonszőlős–TSz-istálló on cast disc-shaped belt-mounts.<sup>275</sup> The rider held a lance in his right hand, though it is hard to decide if he is throwing a javelin or simply holds a lance in his hand. Most

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265 As an analogy the representation of the so-called ‘victorious leader’ of the 2nd jar of the ‘Nagyszentmiklós’ hoard can be mentioned, where the representation of a stirrup is also lacking (Bálint 2004a, 370), although the bottle is dated to the 8th century, when the use of stirrups was common among the Avars.

266 According to the calculations of Uta von Freeden (1991, 622) the length of the spear is at least twice as long as the length of the horse. The length of such lances was described by Maurikios II 6, 11 (Dennis – Gamillscheg 1981, 123).

267 Koliaš 1988, 192.

268 For the representations of Turkic mounted warriors see: Khudyakov 1986, 166–167; Kubarev 2005, 108.

269 Bálint 2004a, 359–362.

270 Husár 2007, 29–41.

271 Fancsalszky 2007.

272 Bálint 2004a, 359.

273 Trugly 1987, tab. xv/8a.

274 Zábójník 1995, tab. III.

275 Németh 1969, 6–7. ábra.



likely it can be interpreted as the application of a traditional image type. A similar mounted warrior was represented on a cast bronze strap-end from the 2nd cemetery at Bánhalom–Czebe puszta II. víztároló, the warrior is throwing a javelin or thrusting a Simurgh with a lance in this representation.<sup>276</sup>

Ján Dekan regarded Sassanian and Coptic art as the antecedents of these Late Avar representations of mounted warriors.<sup>277</sup> These analogies, however, seem to be somewhat distant. It is important to remember the Byzantine iconography of Saint George (or Bellerophon) because his lance, similar to Avar representations, points downwards.<sup>278</sup>

The 2nd jar of the Nagyszentmiklós treasure has considerable significance amongst such representations, where a rhombic pierced spearhead with flag was depicted in the hand of the glorious leader.<sup>279</sup> Csanád Bálint compared it with the openwork spearheads of the Late phase from Transylvania (like Teiuş), and drew attention to the solidus of Tiberius III (698–705) on which a similar spearhead was depicted.<sup>280</sup> A similar triangular spearhead with pierced blade was found in grave No. 48 at Košice–Šebastovce,<sup>281</sup> dated to the second half of the 8th century, similar to the jar of the Nagyszentmiklós treasure.<sup>282</sup> This image type is very different from the former three representations, since in this case the spear is positioned on the right shoulder.

Representations of flagged spears are well known from Eurasian nomads, and Katalin U. Kóhalmi has studied their distribution on the steppes.<sup>283</sup> Flagged spears are well known from Bulgaria,<sup>284</sup> Altay,<sup>285</sup> China,<sup>286</sup> Volga region,<sup>287</sup> in Italy<sup>288</sup> and Byzantium, and therefore it can be regarded as a wide-spread phenomenon.

276 Kaposvári – Szabó 1956; Fettich 1990; Fancsalszky 2007, Pl. 55.

277 Dekan 1972, 434.

278 Csanád Bálint (2004a, 361) firstly compared it with the iconography of the Saint George representations (see Tóth 2005, 184–186).

279 Gschwantler 2002, 15; Bálint 2004a, 424.

280 Bálint 2004a, 364.

281 Budinský-Krička – Točík 1991, 14–15, Taf. 11/1.

282 Bálint 2004a, 564.

283 Kóhalmi 1972, 115.

284 Veliki Preslav petroglyph: Iotov 2004, picture No. 37.

285 Appलगren-Kivalo 1931, Abb. 81, 93; Mavrodinov 1943, 115, fig. 74; Okladnikov 1951, 143–154; Alföldi 1951, 132; Györfly 1959, 1. kép; Sovetova – Mukhareva 2005, 92–105.

286 On a Chinese wall painting from 701: Murals in the Tomb of Li Chung-jun of the Tang Dynasty. Peking 1974. (cited by Bálint 2004a, 361).

287 On the bone saddle-mount of Shilovka: Bagautdinov – Bogachev – Zubov 1998, 184.

288 Grosse 1923/24; von Hessen 1971, 37–41.

## 5 Conclusions

Only 532 spearheads (80.85%) from the 658 listed in the catalogue were suitable for classification, the rest (19.15%) being only known from excavation reports. A significant part of these classified spearheads (48.12%, 256 pieces) belong to the group of reed-shaped (P.I) weapons which was the most popular shape during the Avar Age. The great number of lenticular spearheads is perhaps somewhat surprising, comprising 35 per cent of all the spearheads (188 pieces). The conical spearheads (P.II) are less frequent (51 examples, 9.59%) and the number of triangular spearheads (P.IV) is also low (29 examples, 5.45%).

The proportions of these main blade types vary over time shown by the diagram below.

The Early phase is characterised by complete predominance of two blade types (P.I: reed-shaped and P.III: lenticular), but the number of lenticular spearheads prevails over that of the reed-shaped. The Middle phase witnessed an abrupt decline in the overall number of spearheads, the majority of the few known pieces being of reed-shaped (P.I). A characteristic feature of the period is the rise in the number and proportion of conical spearheads (P.II). The Late phase, however, is characterised by the predominance of reed-shaped blades (P.I) and an increase in the number of conical spearheads (P.II). The number of lenticular spearheads (P.III) is also significant in the Late phase.

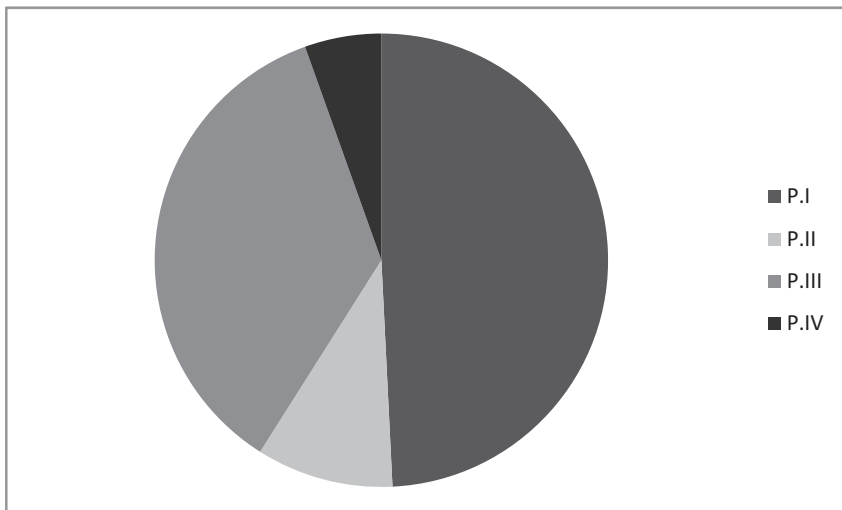


DIAGRAM 2 *Proportions of the major blade types of polearms.*

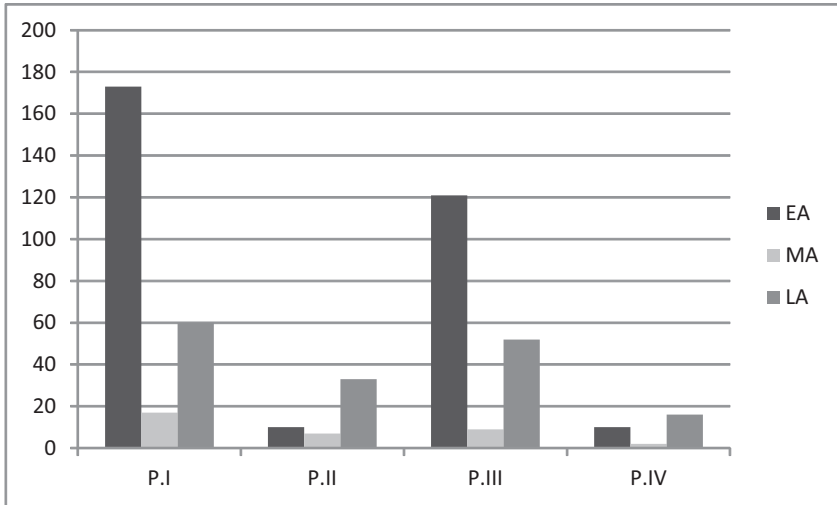


DIAGRAM 3 *Number of spearheads of major blade types by periods.*

The classification of Early phase spearheads revealed some typological developments: A process of simplification can be observed in the case of type P.I.A (reed-shaped blade with connecting chap): the disappearance of the connecting chap and grooved imitation of grid-patterned rings. Conical spearheads (P.II) only appear at the end of this phase.

The formal variability of the spearheads is a reflection of their broad cultural connections. The spearheads of group P.I are known both from Inner Asia<sup>289</sup> and Eastern European steppes,<sup>290</sup> although such spearheads were also found in Byzantine contexts in the Northern Balkans<sup>291</sup> and in areas under strong Byzantine influence such as Lombard Italy and south Germany.<sup>292</sup>

289 Gavrilova 1965, 55; Khudiakov 1986, 106–107, 156–157. Their classification is difficult because of their small number.

290 Caucasus region: Dyrso (Bálint 1989, Abb. 14/12–13); Donyfars (Kaminsky 1996, fig. 8/8) Balticum: Kazakiavichius 1988, 41–42, Ris. 15.: the author's type III is reed-shaped, the blade is longer than the socket, (= 1/4) the socket is faceted, and they are dated to the 6th–7th centuries. During the 7th century in the territory of Ukraine there are no spearheads: Komar – Sukhobokov 2000.

291 Sadovec: Uenze 1992, I. 445. II. Taf. 42/1–4. These spearheads are usually known from settlements and not burials.

292 von Freeden 1991, 626–627; Schulze-Dörlamm 2006, 494–496.

Lenticular spearheads of the P.III form-group are mainly characteristic of Merovingian material culture<sup>293</sup> but they can also be found amongst material associated with the Byzantine forts of the Northern Balkans.<sup>294</sup> The lenticular spearheads with central blade (Dorfmerking type) (P.III.D) is usually distributed in Western and Central Europe from Italy to the Rhine.<sup>295</sup>

It appears that the role of spears decreased during the Middle and Late phase. Only 39 spearheads are known from the Middle phase (map 3) and 200 examples from the Late phase (map 4). The small number of Middle phase spears can be interpreted in various ways: for example, the period was the shortest of the Avar Age (lasting for 50–60 years), and there is the fact that Middle phase male burials are usually identified by their belt-sets, whilst uncertain burials are instead mostly dated to either the Early or Late phase according to their horizontal stratigraphy, meaning that many Middle phase burials may have been incorrectly assigned.

The geographical distribution of the Middle phase spearheads testifies to the predominance of Transdanubia, with 12 out of 39 Middle phase spearheads being found here, and three on the northern shore of the Danube. The northwestern periphery played a significant role during the Late phase in the distribution of these spearheads but Transdanubia and the Tisza river were also of considerable importance. It is important to note that most of the northern sites lie immediately on the shore of the Danube river. The Northern Transdanubian Plain and Transtisia regions, however, are almost devoid of spearheads, although in the Mureş valley in Transylvania there is a small concentration of finds.

Characteristic changes during the Late phase are the narrowing of the reed-shaped blade and the cross section of the blade becoming quadrangular (P.I.F). New developments include the appearance of narrow lenticular spearheads with rhombic cross section (P.III.C), as well as the appearance of new types of western origin (Egling and Pfullingen type), such as the hooked spearheads (*'Hakenlanze'*), though in very small numbers.

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293 Hübener 1977, 510–527; Koch 2001, 61–63.

294 Sadovec (Uenze 1992, I. 445. II. Taf. 42/5–7); Caričin Grad (Kondić – Popović 1977, Tabl. XVII/96; Bavant et al. 1990, 230, fig. 165, Pl. XL/246).

295 Hübener 1972, 196, Abb. 2.

## Edged Weapons

Edged weapons are composed of a single- or double-edged long iron blade ending in a tip at one end and a short wooden hilt at the other. Edged weapons can be divided into single- and double-edged swords, sabres, seaxes and daggers. Axes are not included in the present study as their cutting mechanism differs from that of these long cutting edged weapon and therefore belongs to a category of ‘hitting’ weapons.

The main attribute for the classification of edged weapons (E) is the form and cross section of the blade, thus double-edged (E.I) and single-edged swords (E.II) with straight blade, sabres (E.III) with curved blade and false edge, and seaxes (E.IV) with a short and broad single-edged blade can be distinguished. The length and form of the hilt, its decoration, the mounts of scabbard and its suspensions are secondary attributes and classified distinctly.

704 edged weapons are known from the Avar-age Carpathian Basin (maps 24–26), most of which (582 examples, 82.67%) were suitable for classification. The study of edged weapons, however, is limited by several factors: a considerable number of edged weapons were found in a fragmentary state (105 pieces, 14.9%) as a result of which the type of some examples cannot be identified because the blade has not survived. In 24 cases only the suspension loops were found, in two cases only the crossguard, while in nine cases (4.8%) only the hilt cap survived. A further 36 examples (3.4%) from the catalogue of edged weapons are lost (fifteen examples) and no other documentation (21) was available.

There appears to have been some duplication of finds in reports where the same edged weapon were mentioned under several site names, and therefore cross-referencing of sites has been used in eight cases.<sup>1</sup> Every Avar-age edged

1 The weapon from Baracs–Ágocs tanya is also known as Kunbaracs–Baracsi-puszta and Csanád from the earlier literature (Nagy 1901b, 285; Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, No. 244; mentioned as Dunavecse–Csanádféhegyháza, though the site of the sabre was located to Baracs by Bóna 1982–83, 110–111). Later the same weapon was erroneously identified with the single-edged sword from grave No. 125 of Jánoshida (Erdélyi 1958, 25, XLIV. t. 1; Garam 1991a, 148, III. táblázat, 149, 12. kép), although the weapon from Jánoshida was lost. The two swords from Gyoma–Köröspart (MNM 177/1895.720–721) in the Hungarian National Museum are probably the swords from Gyoma–Torzsászug (MRT 8. 1989. 4/276). Two swords from Győr–Téglavető (XJM 53.278.

weapon mentioned in the literature has been listed in the catalogue, although some remain unpublished or are known only from short excavation reports. Some weapons cannot be found even in the museums where they were known to be stored, while others appear to not to have been inventoried in their respective collections.<sup>2</sup> A number of insecure finds have also been included in the catalogue.<sup>3</sup> Ultimately, only 582 edged weapons (82.67%) were suitable for classification based on the morphology of the blade.

The classification of these blades is often hindered by the remains of the wooden scabbard having been restored on the blade. Fortunately, the width and cross section of the wooden scabbard can help to determine whether the blade was single- or double-edged. However, exact metrical data and the cross section of the blade itself cannot be determined in such cases.

## 1 Classification of Edged Weapons

The doctoral thesis of László Simon<sup>4</sup> was of great help during the writing of this chapter, though his classification and original find numbering has not been followed. Most significant is Simon's suggestion that there is a general tendency in the Early Avar period for development from double-edged to single-edged blades, and therefore the study of these weapons should logically begin with the chronologically earlier double-edged blades. However, whilst Simon's main typological attribute was the combination of blade and cross-guard, in this study the main attribute is just the blade, the crossguard being used only for further subdivision. Although the hilt is not part of the blade, the double- and single-edged blades were also sub-divided into ring-pommel

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1378–1379) depicted in Fettich (1943, Pl. 401–478) are probably the swords from grave No. 484 and 494 (Börzsönyi 1905, 20–22; Fettich 1943, 31).

2 98 (13.88%) edged weapons are only partly published or unpublished. In some cases I used only weapon lists from unpublished cemeteries without further classification: Győr-Ménfőcsanak, Szekszárd–Tószegi-dűlő, Táp–Borbapuszta, in some cases only the inventory lists could be used: Hortobágy–Árkus.

3 A part of these was found in old excavations (like the early excavations of Ágost Sótér from Edelstal (Nemesvölgy) grave No. 78, 207, 209, 210, 215 and 234 (Sótér 1886, 329; Sótér 1898b, 218–220) and Csúny grave No. 4 and 6 (Sótér 1895, 88–89; Sótér 1898a, 124–125; Hampel 1905, II. 141–142, III. Taf. 116. 118), where the author identified small iron pieces as swords, while five edged weapons were only mentioned by József Szentpéteri (1993), and no other traces could be found.

4 Simon 1991.

swords, since most of the ring-pommels were manufactured from the same piece of iron as the blade itself.<sup>5</sup>

As a result, four main form-groups of blade were identified: E.I: double-edged swords, E.II: single-edged swords, E.III: sabres and E.IV: seaxes (fig. 9). The presence of the crossguard is only examined within these blade categories. These main form-groups also suggest a degree of chronological order, though it can be applied only with some restriction.

### 1.1 *Double-edged Swords (E.I)*

Various weapons belong to the form-group of double-edged swords, the main characteristics of which are the broad, symmetrical, double-edged blade, which can be pattern-welded and equipped with a fuller, and these can be subdivided by the presence of a crossguard. 132 double-edged swords are known from the Avar Age, most of which (122 examples, 92.4%) are dated to the Early phase, while six such swords can be dated to the Late phase and two specimens belong to the 9th or 10th century. Double-edged swords are therefore mainly characteristic of the Early Avar period with only a few known from the 8th century. Three blade types of double-edged swords can be distinguished by their cross section and the form of the hilt: E.I.A: double-edged swords with fuller, E.I.B: double-edged swords with lenticular cross section and E.I.C: double-edged swords with ring-pommel (fig. 10).

#### 1.1.1 E.I.A—Double-edged Swords with Broad Fuller (Spathae)

Double-edged swords with fuller (E.I.A) compose a significant group, with 59 examples (44.69%) out of 132 double-edged swords. Swords of such blade form are also known as spathae which was the characteristic edged weapon of Western and Central Europe during the Early Middle Ages (Merovingian and Carolingian periods), and therefore the spathae of the Avar Age can be regarded as weapons of western origin, although this does not exclude the possibility of their local manufacture. Two main sub-types can be distinguished based on the absence and presence of the crossguard: examples dated to the Early phase lack a crossguard (E.I.A/1.a: figs. 56–59), while the later spathae (8th–9th centuries) are equipped with crossguard and pommel (E.I.A/2.a: fig. 60). Most of the spathae are dated to the Early phase (55 examples, 93.22%), while only five examples are dated to the Late phase or the Carolingian period,

5 An exception is the sword from Mandelos, which has the ring-pommel cast of copper alloy and riveted to the hilt (Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1, Pl. 111/1–3).

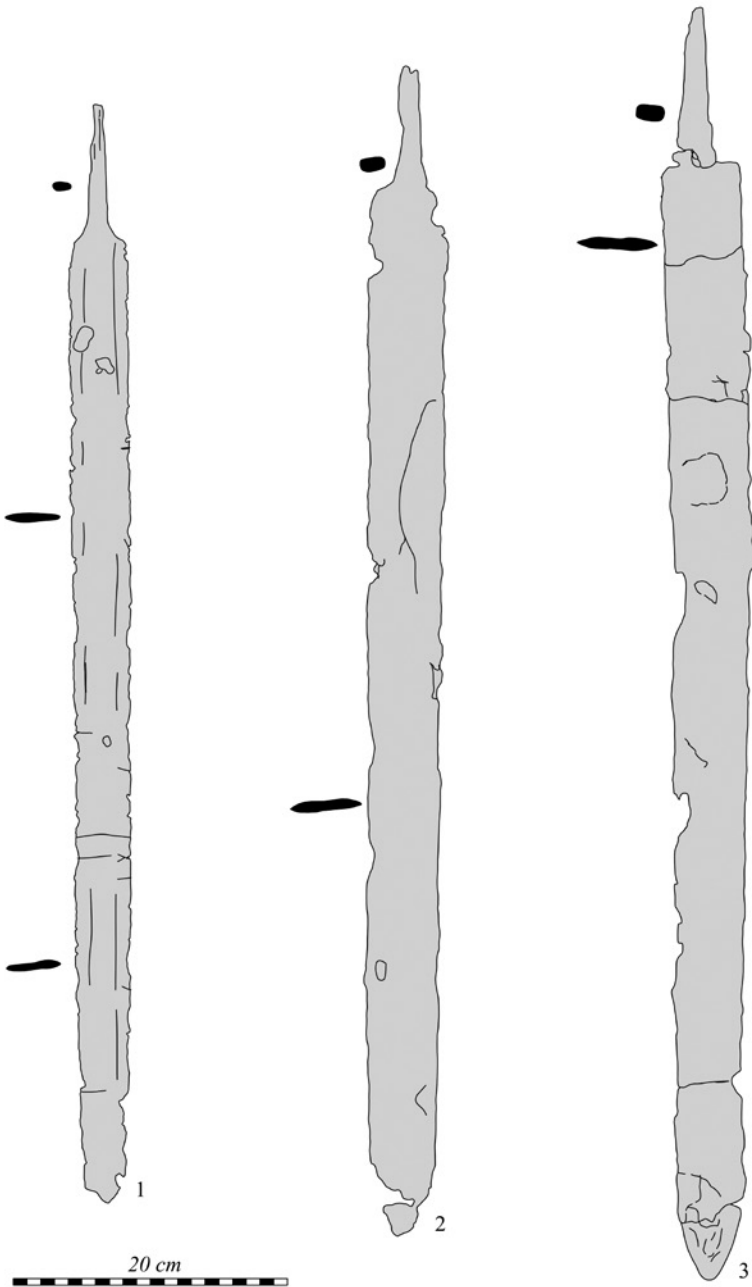


FIGURE 56 *Spathae* (E.L.A.): 1. Budapest III. Óbuda, Szőlő utca (Kovrig 1955a, 33, 7. jegyzet; Kovrig 1955b, 167, No. 4; Nagy 1962, 72; Nagy 1973, 358, 361.; Simon 1991, 288; Nagy 1998, 45, Taf. 38/31.); 2. Kölked–Feketekapu A, grave No. 257 (Kiss 1996, 75, Taf. 56/1.); 3. Kölked–Feketekapu A, grave No. 39 (Kiss 1996, 29, 228, Taf. 26/19.).



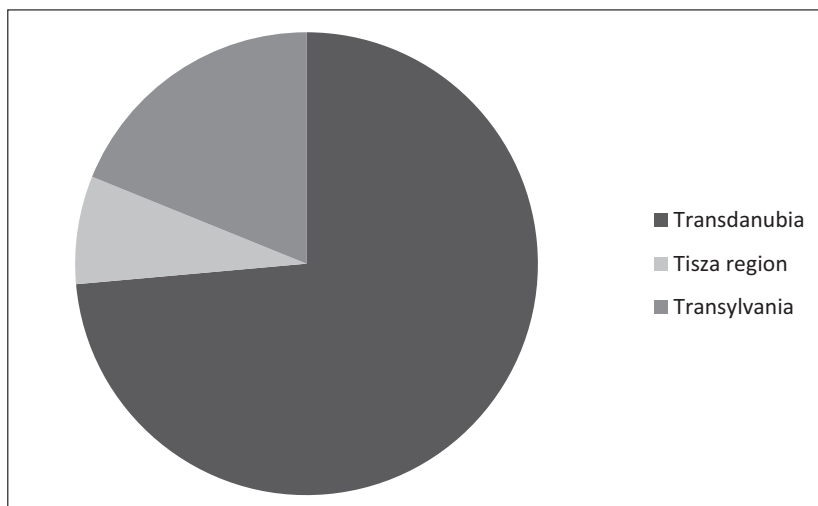


DIAGRAM 4 *Geographical distribution of Early Avar spathae.*

although only two of them were found in actual Late Avar burials.<sup>6</sup> In what follows, these spathae will be presented in chronological order.

The spathae are double-edged swords with broad, symmetrical blade with fuller on its central part, and angular shoulders, its edges running parallel to each other (map 27, figs. 56–60). The blade is often pattern welded. The hilt is usually narrow, trapezoid in shape with quadrangular or rectangular cross section, and the hilt often ends in a pommel cast of copper alloy or forged of iron. Spathae of the Early phase are not equipped with a crossguard, probably because it was made of organic material (like wood). The length of spathae is usually 80–90 cm, its blade width being around 4–5 cm, and the hilt length is between 10 and 15 cm. 53 Early phase swords belong to this type.

Hungarian research has mainly focussed on Hunnic and Early Merovingian (Lombard and Gepid) spathae which were identified among Avar weapons relatively late. During the study of the Környe cemetery Ágnes Salamon and István Erdélyi observed a considerable number of these spathae among the edged weapons recovered, and their presence was explained chronologically: the cemetery was dated before the arrival of the Avars (568).<sup>7</sup> Attila Kiss first

6 Wien–XXIII. Liesing grave No. 3 (Mossler 1948, 222); Želovce grave No. 124 (Čilinská 1973, 57, Taf. xxii/16).

7 Salamon – Erdélyi 1971, 70–71. This chronology was not accepted, for the chronological debate see chapter 1.2.c.

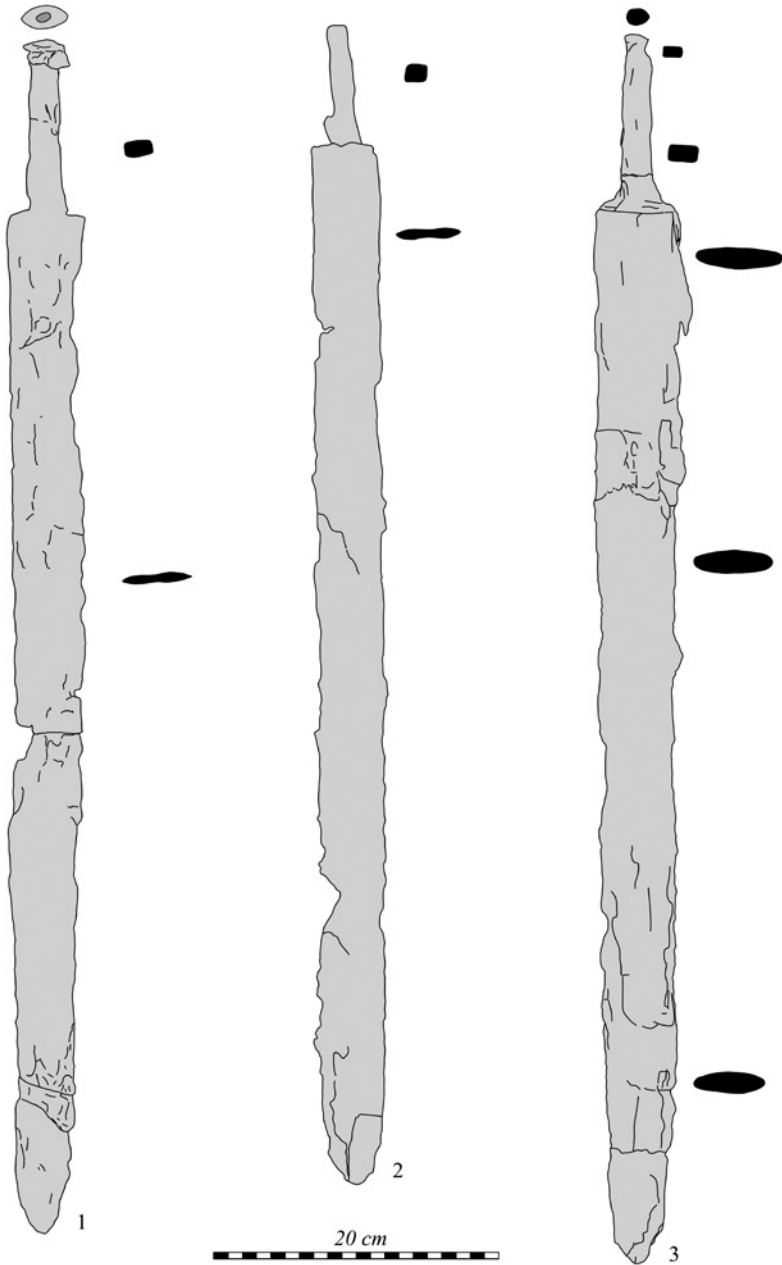


FIGURE 57 *Spathae* (E.I.A.): 1. Kölked–Feketekapu A, grave No. 264 (Kiss 1996, 77–78, Taf. 59/12.); 2. Kölked–Feketekapu A, grave No. 268 (Kiss 1996, 78–79, Taf. 59/10.); 3. Kölked–Feketekapu B, grave No. 336 (Kiss 2001, 115–117, Taf. 75/13.).

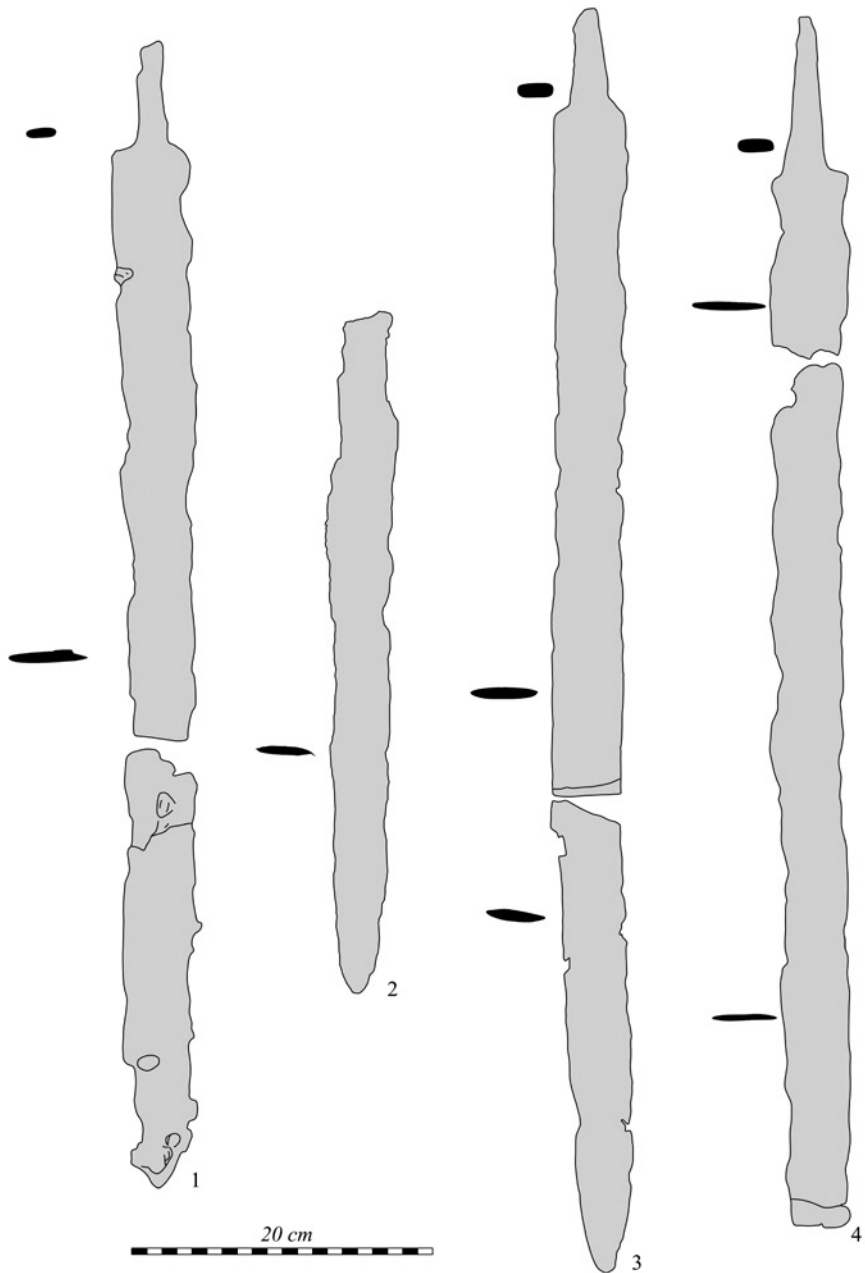


FIGURE 58 *Spathae* (E.I.A) 1. Környe, grave No. 8 (Salamon – Erdélyi 1971, 14–15, Taf. 32/6; Simon 1991, 295.); 2. Környe, grave No. 16 (Salamon – Erdélyi 1971, 15, Taf. 32/5; Simon 1991, 296.); 3. Környe, grave No. 44 (Salamon – Erdélyi 1971, 18, Taf. 32/7; Simon 1991, 296.); 4. Környe, grave No. 66 (Salamon – Erdélyi 1971, 20, Taf. 33/4; Simon 1991, 296.).

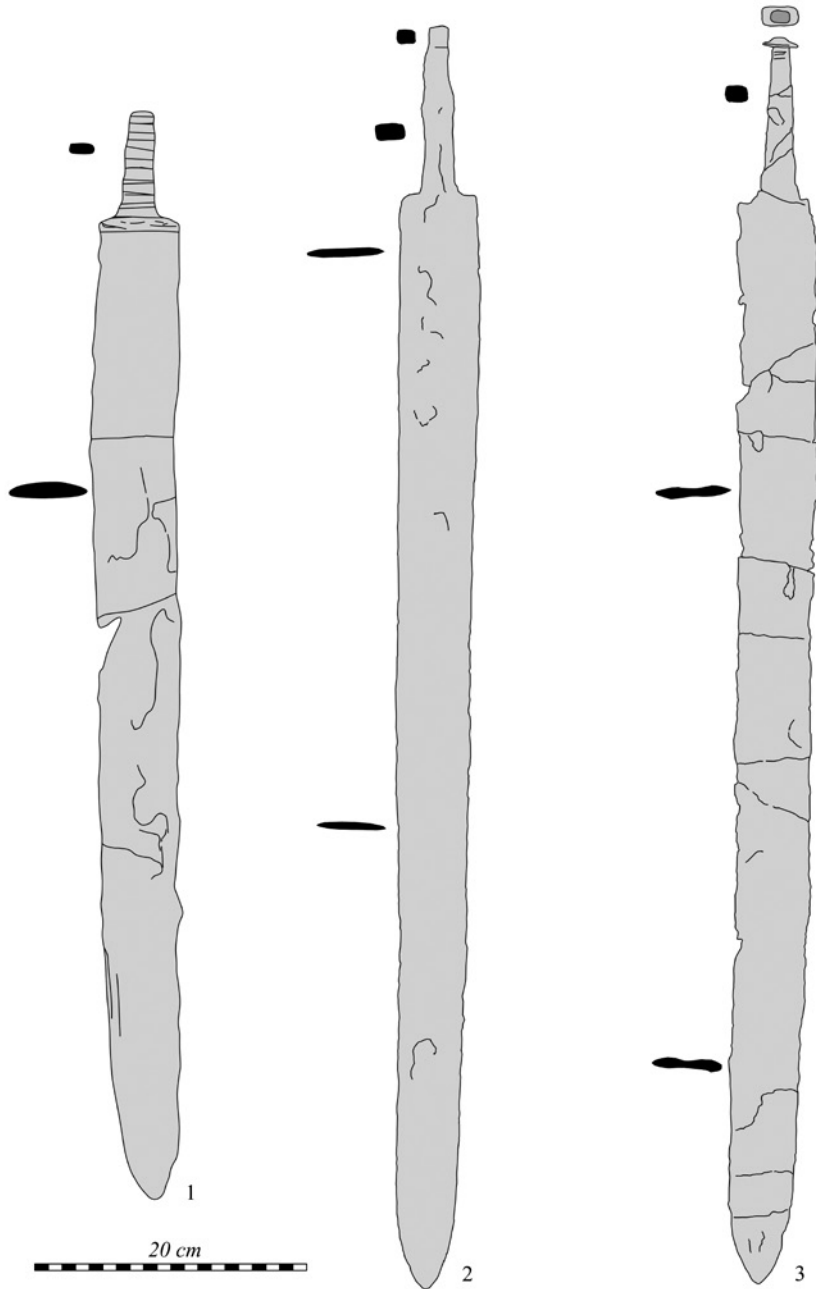


FIGURE 59 *Spathae* (E.I.A.): 1. Tiszafüred–Majoros, grave No. 44 (Garam 1995, 13, Taf. 123.); 2. Kölked–Feketekapu B, grave No. 470 (Kiss 2001, 152–153, Taf. 86/35.); 3. Kölked–Feketekapu B, grave No. 132 (Kiss 2001, 65–66, Taf. 41/25.).

drew attention to the relative frequency of these weapons in Early phase burial grounds of Eastern Transdanubia and Transylvania which he connected to the Gepid continuity.<sup>8</sup> The existence of this type in the Tisza region was then demonstrated by the publication of the Tiszafüred cemetery by Éva Garam.<sup>9</sup> The study by Tivadar Vida concerning the suspension of the spathae and spatha belts is especially significant.<sup>10</sup>

53 spathae are known from the Early Avar Carpathian Basin, which is 44.1% of all Early Avar double-edged swords. The geographical distribution of these weapons is very disproportionate (map 27), however, with 12 examples known from the 'A' and 'B' cemeteries of Kölked–Feketekapu and ten examples from the cemetery of Környe. Almost half of the known examples were therefore found on these two sites.

The Early Avar spathae are concentrated in Eastern Transdanubia, their number being especially high on sites such as Környe (fig. 58), Kölked–Feketekapu A and B (figs. 56/2–3, 57), and Szekszárd–Bogyiszlói út. Western Transdanubia is less represented, two pieces being known from Zala county, a spatha button from a richly furnished burial chamber in Fenékpusztá–Pusztaszentegyházi dűlő<sup>11</sup> and a spatha from grave No. 1 from Kehida–Központi Tsz-major dated to the second half of Early phase. Altogether 39 spathae were found in Transdanubia (73.58% of all examples). The Great Hungarian Plain is represented by three cemeteries from the middle reaches of the Tisza river: Tiszafüred,<sup>12</sup> Tiszaderzs<sup>13</sup> and Tiszaroff. The latter site is known from a burial with typical Gepid grave goods but dated by a coin of Maurice (582–602) to the turn of the 6th–7th century.<sup>14</sup> These sites from the Tisza region are regarded as proof of a local Gepid continuity: only four examples (7.5%) were found on the Great Hungarian Plain. The Gepid continuity has already been proved in the case of Transylvania, where several cemeteries begun during the first

8 Kiss 1992; Kiss 1996.

9 Garam 1995, 345; Kiss 1999/2000, 359–365.

10 Vida 2000, 161–175.

11 Róbert Müller dated this find to the first half of the 7th century based on the interlace ornaments on the golden mounts of a wooden cup found in the burial (Müller 1999/2000, 351, 355–356). This chronology was verified by the research on the Germanic Animal Style (Heinrich-Tamáská 2006b, 513–514) and C14 dating (Stadler et al. 2003, 268–269), both of which date the burial to the second half of the 6th century.

12 Grave No. 44, 114b and 768 (Garam 1995, 13, Abb. 5, Taf. 123, 21, Abb. 8, Taf. 174/1, 94, Taf. 184).

13 Grave No. 1 or 2 (Kiss 1993, 65).

14 The find is unpublished, with only an online report available: [http://www.mnm.hu/Upload/doc/mnm\\_sajtoanyag\\_tiszaroff.pdf](http://www.mnm.hu/Upload/doc/mnm_sajtoanyag_tiszaroff.pdf).

half of the 6th century and still saw burials during the 7th century,<sup>15</sup> such as Vereşmort,<sup>16</sup> Noşlac<sup>17</sup> and Brateiu 3.<sup>18</sup> Only ten spathae were found in Transylvania (18.86%).

The examples from Transdanubia do not prove continuity, since they appeared in the second half of the 6th century (demonstrated by tripartite belt-sets) without local predecessors,<sup>19</sup> and therefore the ethnic identification of these cemeteries is of some question. The use of spathae continued during the 7th century, the latest of this type being the examples of Tiszafüred (fig. 59/1) which date to the second third of the 7th century.<sup>20</sup>

The spathae thus played a significant role among the close-combat weapons of the Early phase, although their use was limited to areas of the Avar Qaganate settled by Germanic peoples or rather a population related to the Merovingian culture.

Double-edged swords are extremely rare during the Late phase, and appear mostly of western origin: their blade is broad, symmetrical and has a fuller on it (fig. 60). These swords differ from the early spathae, since these examples from the 8th century always have iron crossguard and pommel. Only four late spathae are known from the Avar-age Carpathian Basin. A double-edged sword with a short, straight and wide crossguard and a flat, triangular pommel made of two pieces, was found in grave No. 124 at Želovce (fig. 60/1).<sup>21</sup> A similar double-edged sword was found in grave No. 3 at Wien–Liesing (fig. 60/2),<sup>22</sup> its crossguard being short and wide, and its pommel flat and triangular.

15 For Transylvanian Gepidic cemeteries: (Kovács 1913; Kovács 1915); their interpretation: (Bóna 1978, 123–170; Bóna 1986a, 162–164; Horedt 1985, 164–168; Harhoiu 2001, 110–120).

16 Grave No. 5, 13, 16 (Roska 1934, 125, Abb. 4/D; 128, Abb. 4/C; 129, Abb. 4/B).

17 Grave No. 6, 17, 21 and 43 (Rusu 1962, 275).

18 Grave No. 85, 214 and 218 (Nestor – Zaharia 1973, 193–201; Bóna 1986a: 171, 182; Bârză 1986, 89–104; Bârză 1991, 211–214; Kiss 1992, 65).

19 According to István Bóna the use of Lombard cemeteries ceased in 568 when the Lombards left for Italy (Bóna 1984, 309), although much new evidence suggests continuity of the Lombard population in Pannonia during the second half of the 6th century, like the golden spatha button of glass inlay from Fenékpuzsza–Pusztaszentegyházi-dűlő (Müller 1999/2000, 345) and the Weihmörting type belt-sets of grave No. 34 of Szentendre (Bóna 1974, 122. 62–63; Menghin 1983, 359) and grave No. 65 of Pottenbrunn (Stadler et al. 2003, 267. Abb. 3).

20 Éva Garam (1995, 424) dated the beginning of the use of this cemetery to the Early phase, in the middle of the 7th century.

21 Čilinská 1973, 57, Taf. XXII/16.

22 Mossler 1948, 222.

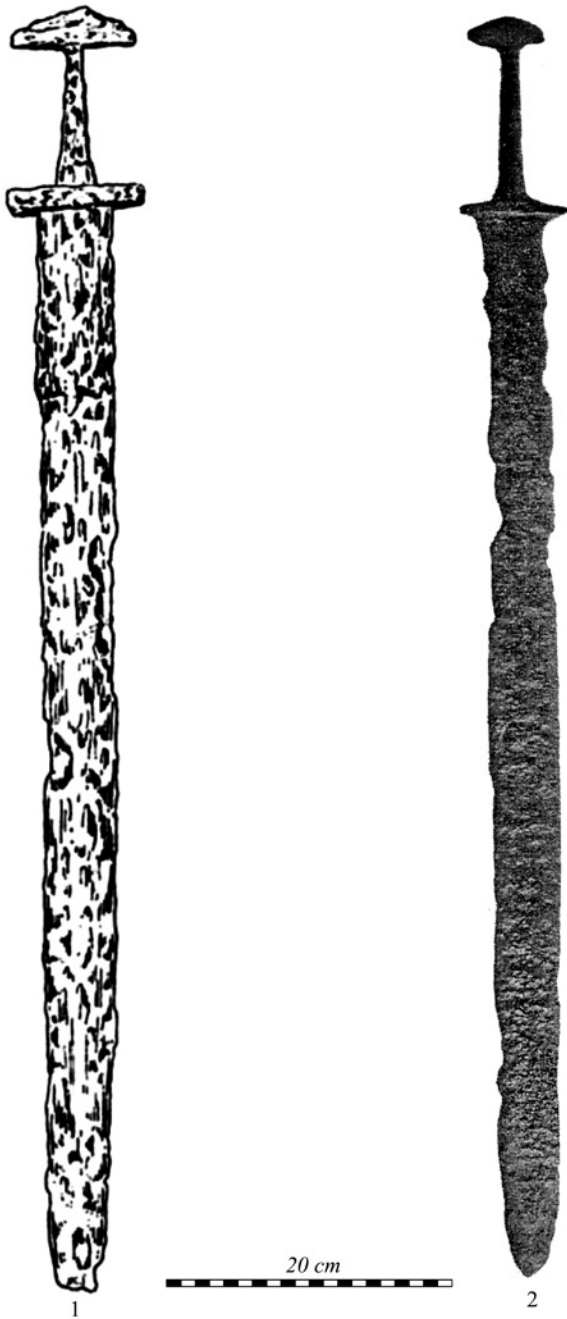


FIGURE 60 *Spathae* (E.I.A.) of the 8th century: 1. Želovce, grave No. 124 (Čilinská 1973, 57, XXII/16.); 2. Wien-XXIII. Liesing, grave No. 3 (Mossler 1948, 222.).

A double-edged sword with a three-lobed inlaid pommel and short, wide, rounded crossguard, was found at Szigetvár as a stray find. This sword was classified as Petersen type T by Attila Kiss who dated it to the 10th century,<sup>23</sup> although the sword is probably dated to the second half of the 8th to first half of the 9th century, as demonstrated by László Kovács.<sup>24</sup> The sword belongs to the 4th combination type of Geibig, and dated to the first half of the 9th century.<sup>25</sup>

The fourth example was found as a stray find in the area of an Avar-age cemetery at Brodski Drenovac. However, it belongs to Petersen's 'x' type, with its semicircular pommel and long, straight crossguard,<sup>26</sup> which is dated to the 10th century and therefore cannot belong to the Avar-age cemetery.

The sword of grave No. 124 at Želovce is dated by its cast bronze belt-set (rectangular mounts with griffons)<sup>27</sup> to the 2nd stage of the Late Avar period, in the first half of the 8th century. The sword was dated after 680 by Frauke Stein based on the typology of Behmer but could still have been in use until the middle of the 8th century.<sup>28</sup> According to the Central European and Scandinavian classification this sword belongs to Petersen B type,<sup>29</sup> the pommel can be described as the Niederrahmstadt–Dettingen–Schwabmühlhausen type of F. Stein,<sup>30</sup> while the sword belongs to the 1st combination type of Alfred Geibig which is dated by the Pfullingen type spearheads to the first half of the 8th century, although a later date (second half of the 8th century) is equally possible.<sup>31</sup>

The sword from Brodski Drenovac<sup>32</sup> has a long, straight crossguard and semicircular flat pommel, and belongs to the Petersen x type.<sup>33</sup> Geibig classified swords of x type within his 12th combination type, and dated them between the second half of the 9th and the end of the 10th century,<sup>34</sup> meaning that this weapon belongs to a later period. The sword was found as a stray find, however, its connection to the cemetery is unclear.

23 Kiss 1983, 289–290; Kiss 1985, 303; Kiss 1990, 204.

24 Kovács 1994–95, 176. Abb. 12/4.

25 Combination type 4.3.2.2 (Geibig 1991, 37). For its dating: Geibig 1991, 141–142, 151.

26 Vinski-Gasparini – Ercegović 1958, 144–145, 157. Tabl. xv/8.

27 Čilinská 1973, 57, Taf. xxii.

28 Behmer 1939, 190–194; Stein 1968, 239; Zábajník 1978, 195.

29 Petersen 1919.

30 Stein 1967, 9.

31 Geibig 1991, 25–31. Abb. 2, 140.

32 Vinski-Gasparini – Ercegović 1958, 144–145, 157. Tabl. xv/8.

33 Petersen 1919.

34 Geibig 1991, 56–60, 144–145.



The spathae (double-edged swords of western origin) were not common close combat weapons during the Late Avar period compared to that of the Early phase, and can be regarded as a peripheral phenomenon during the 8th century.<sup>35</sup> The use of earlier spathae ceased with the end of the Early phase, and these double-edged swords reappeared after a gap of at least two generations in a changed form (short crossguard and triangular pommel) during the 8th century, and there can be no connection between these spathae of Early and Late phase. The small number and dispersed distribution of the late examples suggest that they did not become a common part of Late Avar weaponry. The main reason for this was the popularity of single-edged weapons in Avaria by that time, and as a consequence the Avars could integrate the long, single-edged seaxes better into their armament repertoire than the double-edged spathae.<sup>36</sup>

### 1.1.2 Double-edged Swords with Blades of Lenticular Cross section (E.I.B)

The primary characteristic of these swords is the double-edged blade of 3.5–4 cm width, and which have a lenticular cross section. Most of these weapons (62 examples) are dated to the Early phase, to which there are only three exceptions, one of them being clearly dated to the Late phase<sup>37</sup> and the remaining three being insecurely dated to this Late phase (map 28, figs. 61–62).<sup>38</sup> Crossguards are absent in most instances (58 swords, 89.2%), while seven swords were equipped with these crossguards (fig. 62).<sup>39</sup> Most of these swords (32 examples, 61.53%) were found in the Great Hungarian Plain, primarily in the Transisya region (22 pieces, 68.75% of the swords from the Great Hungarian Plain), while only 18 such swords were found in Transdanubia

35 Besides the 52 early spathae (E.I.A/1) and 25 late Avar seaxes (E.IV.D), the number of double-edged swords in the Late phase are very few.

36 It was first observed by Béla Miklós Szőke (1992a, 95).

37 Čierny Brod 1.–Homokdomb grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12. Obr. 7; Zábójník 1995, No. 19).

38 Elek–Kispél, homokbánya, Ottlakai szőlők (Csallány 1956, 110. 252. lelőhely; ADAM, 127); Erzsébet–belterület (Juhász 1897, 263; Hampel 1905. II. 332; Kiss 1977, 25).

39 Aradac–Mečka grave No. 85 (Nad 1959, 62, Tab. XXVII/1); Čierny Brod 1.–Homokdomb grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12. Obr. 7); Keszthely–Fenekpuszta grave No. 1 (Lipp 1885a, 9; Hampel 1894, 89–90; Bóna 1982–83, 117–119. 12. t. 1; Simon 1991, 294. II. kép 6); Kiszombor E grave No. 29 (Csallány 1939, 137; Simon 1991, 295. 10. kép 5. 19. kép); Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57); Szentes–Lapító (Csallány 1933–34, 207–208; Simon 1991, 307); Tolnanémedi, Szentpéteri szőlőhegy, stray find (Nagy 1901a, 317. 1/II. 3. 4; Fettich 1937, 128; Simon 1991, 309).

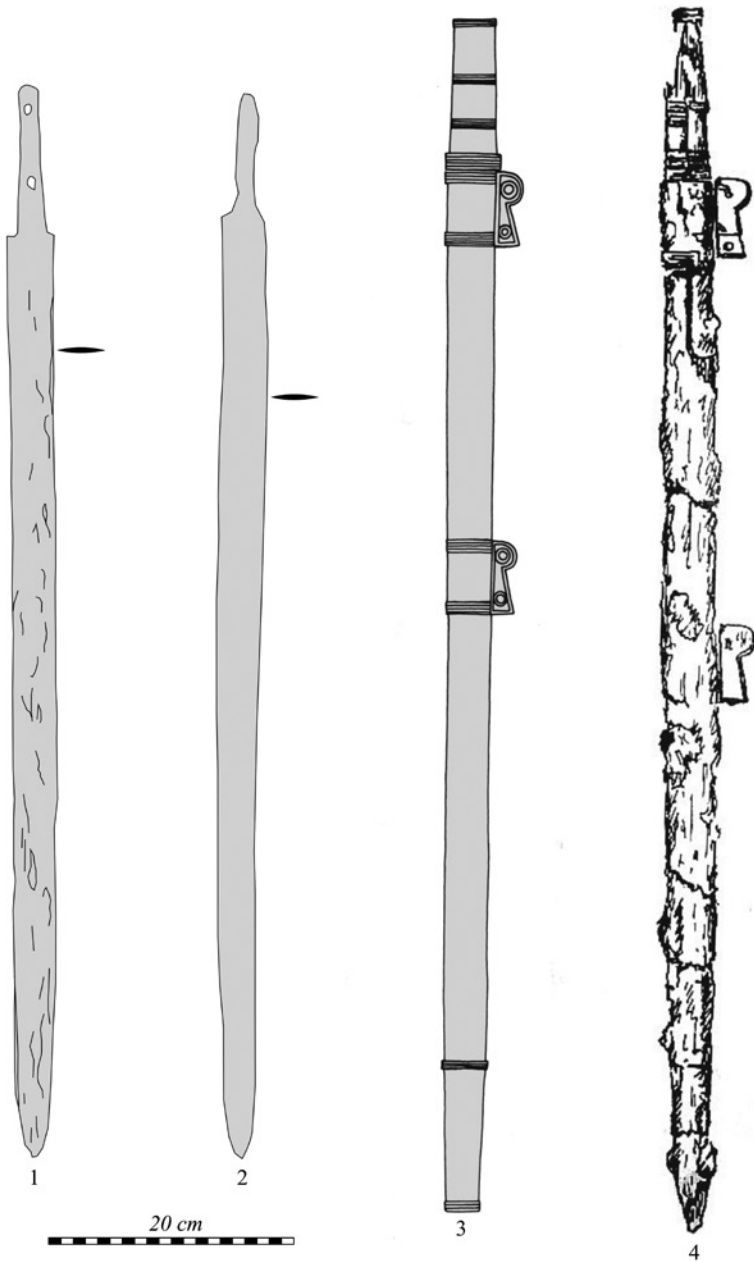


FIGURE 61 *Double-edged swords with lenticular cross section (E.I.B):* 1. Andocs-Újhalastó, grave No. 21 (Garam 1973, 134, 6. ábr 42; Simon 1991, 286.); 2. Bóly-Sziebert puszta B, grave No. 21 (Papp 1962, 185, XXVII. t. 4; Simon 1991, 288.); 3. Kiszombor O, grave No. 2 (Csallány 1939, 125-126, I. t. 1-1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35-36.); 4. Aradac-Mečka, grave No. 31 (Nađ 1959, 58, Tab. VIII/1; Dmitrijević - Kovačević - Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152, LXXIX/6; Simon 1991, 286.).

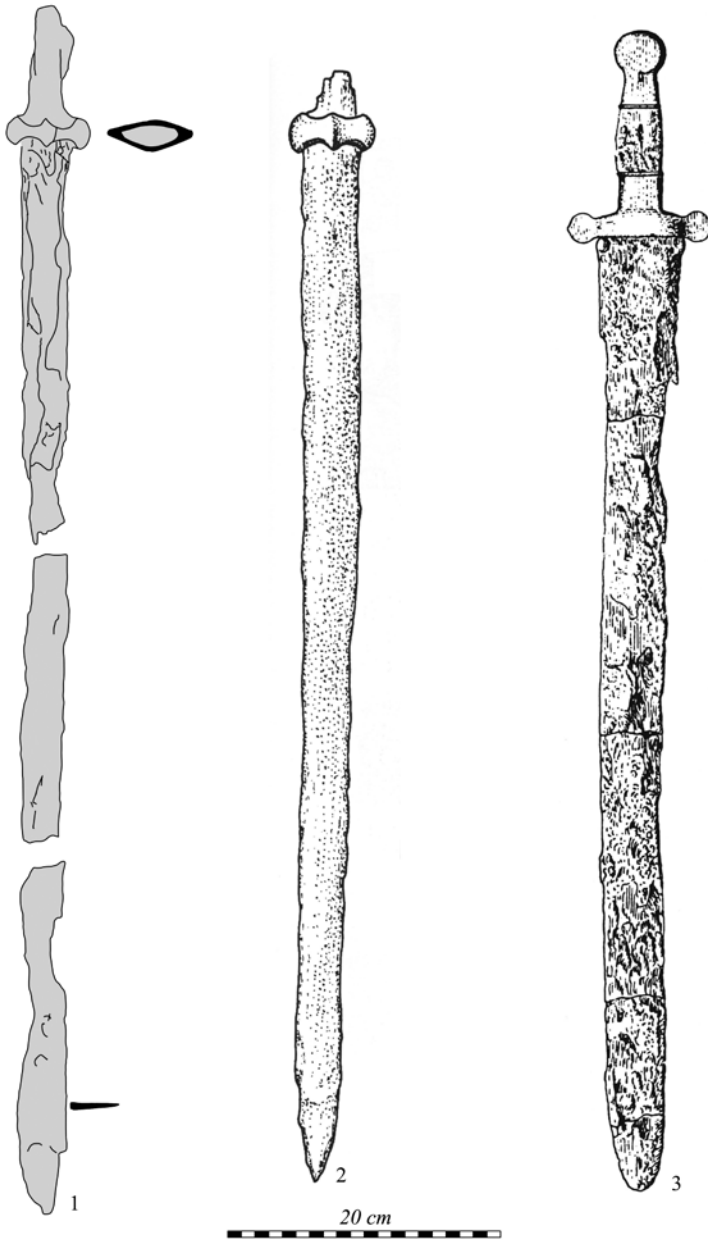


FIGURE 62 Byzantine swords: 1. Kölked–Feketekapu A, grave No. 259 (Kiss 1996, 75–76, Taf. 57); 2. Aradac – Mečka, grave No. 85 (Nád 1959, 62, Tab. xxvii/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196., Abb. 2, 203–204.); 3. Čierny Brod I. – Homokdomb, grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábajník 1995, No. 19.).

(map 28). A number of these swords were decorated with gold, silver or copper alloy sheet about their hilt and scabbard (12 examples, 23%).

35 double-edged swords with lenticular cross section do not have a cross-guard and their hilt and scabbard was not decorated by precious metal sheets (E.I.B/1.a: fig. 61). All of these weapons are dated to the Early phase, their geographical distribution is even, being known from Transdanubia<sup>40</sup> and a significant number from Transtisia,<sup>41</sup> with far fewer found in the Danube-Tisza interfluvium (map 28).<sup>42</sup> This geographical distribution is probably a consequence of the early chronology of these weapons.

The hilt of some of these swords is flat, rectangular in shape and fitted with one or two rivets, this variant being mainly characteristic of Transdanubia.<sup>43</sup>

40 11 swords belong to this variant (33.3%) from the Transdanubian sites: Andocs–Újhalastó grave No. 21 (Garam 1973, 134, 6. ábr 42; Simon 1991, 286); Bicske–Óbarok (Fülöp 1984, 257–258, 6. ábra; Simon 1991, 287); Bóly–Sziebert puszta B grave No. 21 (Papp 1962, 185. XXI); Budakalász–Dunapart grave No. 458; Cikó; Erzsébet–belterület (Pusztaszenterzsébet; Püspökszenterzsébet) (Juhász 1897, 263; Hampel 1905, II. 332; Kiss 1977, 25); Környe, stray finds, two examples (Salamon – Erdélyi 1971, 30, Taf. 34/4–5); Pápa–Úrdomb grave No. 1 (Jankó 1930, 128. 136–138. 140. 87. kép 16; Simon 1991, 304); Tokod–Várberek (Bakay 1967, 137–138); Tokod (MNM 36/1907).

41 16 swords from Transtisia (48.48%): Deszk G grave No. 49 (Csallány 1939, 137; Simon 1991, 291); Deszk M, Czuczai I. földje grave No. 1 (Csallány 1939, 137; Simon 1991, 291); Deszk O, Czuczai III grave No. 3 (Csallány 1939, 137; Csallány 1969–1971, 13; Simon 1991, 291); Deszk O, Czuczai III grave No. 5 (Csallány 1972, 13); Deszk P (Kláralfalva–Kukutyin) grave No. 1 (MFM 53.23.22); Deszk P (Kláralfalva–Kukutyin) grave No. 2 (Csallány 1939, 137; Trogmayer 1984, 89. 15. lh; Simon 1991, 291); Deszk Sz grave No. 16 (Csallány 1939, 137; Trogmayer 1984, 89. 18. lh); Dudeștii Vechi (Óbesenyő, Bukova puszta) (Kisléghy Nagy 1911, 314); Elek–Kispél, homokbánya, Otlakai szőlők (Csallány 1956, 110. 252. lelőhely; ADAM, 127); Ferencszállás–Lajtár Gy.–Bárdos P. halma grave No. 3 (Csallány 1939, 17; Csallány 1956, 285); Gyoma–Torzsás-zug (MRT 8. 1989. 4/276); Mokrin–Vodoplav grave No. 62 (Mrkobrad 1980, 98, 152; Simon 1991, 302; Balogh 2004, 268. 299. 23. kép 48); Mokrin–Vodoplav grave No. 67 (Balogh 2004, 268–269. 24–25. kép, 25. kép 21); Szegvár–Oromdűlő grave No. 100 (Simon 1991, 306; Lőrinczy 1992, 90–100. Abb. 12/3); Szőreg–Homokbánya grave No. 2 (Bálint – Maráz 1971, 75–76; Trogmayer 1977, 65; Kürti 1983, 187; Simon 1991, 307); Tiszavasvári–Koldusdomb grave No. 1 (Csallány 1960a, 51–55. XVI. t. 2; Simon 1991, 308, 14. kép 4. 15. kép 11).

42 Six examples, 18.18%: Jászapáti–Nagyállás út grave No. 402 (Madaras 1994, 95, Taf. L/12); Szeged–Makkoserdő grave No. 142 (Salamon 1995, 122–123, 162. Pl. 10); Szeged–Makkoserdő grave No. 285 (Salamon 1995, 134, 162. Pl. 20/1); Tiszavárkony–Hugyin-part grave No. 24 (Kiss 1962, 22–23. XII/1. tábla, XXXVII. t. 3; Simon 1991, 308); Tiszavárkony–Hugyin-part grave No. 55 (Kiss 1962, 45. XXXVII. t. 5; Simon 1991, 309); Zagyvarékas–Gát (Könyöki 1897; Csallány 1956, 1073. lh).

43 Andocs–Újhalastó grave No. 21 (Garam 1973, 134, 6. ábr 42); Bóly–Sziebert puszta grave No. B 21 (Papp 1962, 185. XXI, XXVII. t. 4) and the stray finds of Környe (Salamon – Erdélyi 1971, 30, Taf. 34/4–5).

The other examples belonging to this type have no distinguishing attribute. The sword from Beşeneu is the longest, with a length of 1 m.<sup>44</sup> Only five of the mentioned swords can be accurately dated. The Martynovka type belt-set from the Mokrin burials date them to the first half of the Early phase,<sup>45</sup> while the burial from Pápa–Úrdomb has been dated to the first half of the 7th century.<sup>46</sup>

As mentioned earlier, some of the double-edged swords with blades of lenticular cross section without crossguards were decorated with precious metal sheets about their hilt or scabbards (E.I.B/1.b). 12 double-edged swords were decorated with gold, silver or copper alloy sheets on their loops (fig. 61/3–4). The occurrence of grave robbing may have had a serious effect on the occurrence of this group, and it is possible that some examples of the former variant belong to this group, although no such mounts now survive. The possibility of further examination is enhanced by the survival of these morphological parts. The geographical distribution of these swords differs from that of the spathae (E.I.A/1): these swords are evenly distributed in the Carpathian Basin, and found in the same numbers in Transistia,<sup>47</sup> Transdanubia<sup>48</sup> and the Danube-Tisza interfluvium.<sup>49</sup>

Most of these weapons are dated to the first half of Early phase, their role being taken over later by single-edged swords. They are dated to the Early phase partly by coins found as grave goods, such as the grave at Szegvár–Sápoldal,

44 Kisléghy Nagy 1911, 314.

45 Csilla Balogh (2004, 268–269) dated these mounts to the second half of the 6th century.

46 This chronology if verified by the stamped pseudo-buckles and the purse-buckle of type Pápa. (Jankó 1930, 128. 136–138. 140) For the chronology of this buckle: Garam 2001, 109–110.

47 Four swords, 33.33%: Aradac–Mečka grave No. 31 (Nád 1959, 58, Tab. VIII/1); Deszk G grave No. 8 (Csallány 1939, 127. 129. 1. t. 2–2a, 2. kép 2–2a); Kiszombor O grave No. 2 (Csallány 1939, 125–126, 1. t. 1–1a, 2. kép. 1); Szegvár–Sápoldal (Bóna 1979, 5. 8. 3. kép 1; Bóna 1980, 48–52).

48 Four swords, 33.33%: Csolnok–Szedres, Kenderföldek grave No. 13 (Erdélyi 1988, 195, 203); Környe grave No. 75 (Salamon – Erdélyi 1971, 20, Taf. 10, Taf. 32/1, Abb. 4/1); Környe grave No. 109 (Salamon – Erdélyi 1971, 24, Taf. 19. Taf. 32/4); Törökbálint 36/25. site grave No. 1 (Kovrig 1957, 119–120. XVIII. T. 1–2. XVIII. t. 1. 26. ábra).

49 Four examples: Bačko Petrovo Selo–Čik grave No. 28 (Bukner 1968, 172, T. LIX/1; Simon 1991, 289, 16. kép 11; Bugarski 2009, 39. 116–117. fig. 102. T.VI); Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6. 16. kép 12; Simon – Székely 1991, 188, 191–192. 193–195); Tiszavárkony–Hugyin-part grave No. 20 (Kiss 1962, 18–19. XIV. t. 2. XXXVII. t. 3; Simon 1991, 308); Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343. fig. 6/1. 16; Simon 1991, 311. 16. kép 9).

which is dated by a copy of a golden solidus of Maurice (582–602),<sup>50</sup> or grave No. 2 at the Kiszombor 'O' cemetery with a golden solidus of Phocas (602–610) (fig. 61/3).<sup>51</sup> Besides the coins, other grave goods like belt-sets or pieces of jewellery also help with their dating,<sup>52</sup> demonstrating that these swords were used in the first half of the Early phase, earlier than the so-called pseudo-buckle horizon or the horizon of complex back-mounts.

The double-edged swords with lenticular cross section equipped with a crossguard (E.I.B/2) are quite rare finds in the Avar-age Carpathian Basin: only seven examples are known which is only 13.46% of the swords belonging to this type (fig. 62). Two variants can be identified within this type: the swords with iron crossguards and those with copper alloy crossguards. As will be demonstrated, these double-edged swords with copper alloy crossguards are of Byzantine origin.

The swords with iron crossguards (E.I.B/2.a) are very few in number, only four such examples being known, and in some cases only the impression of the crossguard could be observed.<sup>53</sup> These are distributed evenly between the Great Hungarian Plain<sup>54</sup> and Transdanubia.<sup>55</sup> All of the known examples are dated to the Early phase, and they were often found together with Masque type belt-sets<sup>56</sup> which date them to the first half of the Early phase. Their form and structure is similar to the swords of the 5th century (Huns),<sup>57</sup> though there are

50 For the coin-imitation: (Bóna 1980, 31–36; Somogyi 1997, 84–85).

51 Garam 1992, 142. Taf. 33–36; Somogyi 1997, 53–54.

52 The golden pyramid-shaped earrings of grave No. 8 at Deszk G (Csallány 1939, 127, 129) and grave No. 2 at Kiszombor O (Garam 1992, 142, Taf. 33–36), and the granulated golden pyramid-shaped earring, rosette-shaped forehead-decoration and lamellar armour from Szegvár-Sáppoldal (Bóna 1979, 5–8; Bóna 1980; Garam 1992, 139–140) all suggest the same period.

53 Szentes-Lapistó (Csallány 1933–34, 207–208; Simon 1991, 307).

54 Kiszombor E grave No. 29 (Csallány 1939, 137; Simon 1991, 295. 10. kép 5, 19. kép); Szentes-Lapistó (Csallány 1933–34, 207–208; Simon 1991, 307).

55 Keszthely-Fenekpuszta grave No. 1 (Lipp 1885a, 9; Hampel 1894, 89–90; Bóna 1982–83, 117–119. 12. t. 1; Simon 1991, 294. 11. kép 6); Tolnanémedi (Nagy 1901a, 317. 1/11. 3. 4; Fettich 1937, 128; Simon 1991, 309).

56 Keszthely-Fenekpuszta grave No. 1 (Lipp 1885a, 9; Hampel 1894, 89–90; Bóna 1982–83, 117–119. 12. t. 1; Simon 1991, 294. 11. kép 6); Szentes-Lapistó (Csallány 1933–34, 207–208; Simon 1991, 307); Tolnanémedi (Nagy 1901a, 317. 1/11. 3. 4; Fettich 1937, 128; Simon 1991, 309).

57 For Hunnic swords, see Bóna 1991, 175–176; Menghin 1994–95, 165–186; Anke 1998, 73; Botalov 2006, 35–45.

significant differences: the crossguard of Hunnic swords is long and straight, while the crossguard of these Avar swords is shorter and oval in shape.

The sword from grave No. 1 from Keszthely–Fenekpuszta was found during the excavations by Vilmos Lipp during the 1890s, associated with a cast belt-set of masque type. The sword was studied by István Bóna, who compared it to swords of the Hun period.<sup>58</sup> A similar edged weapon was found in Tolnanémedi–Szentpéteri szőlőhegy together with a Martynovka type belt-set.<sup>59</sup>

These artefacts have been discussed by Péter Somogyi in his study on Masque type belt-sets.<sup>60</sup> László Simon dated these swords to the end of the 6th and first third of the 7th century,<sup>61</sup> while Csilla Balogh suggested a date in the 6th century for these finds.<sup>62</sup> This variant can be one of the earliest amongst those of the Early phase.

Double-edged swords of lenticular cross section with crossguard have a distinct variant which is characterised by its crossguard being cast of copper alloy, which is extremely rare during the Avar Age, with only three such examples being known, two of which are dated to the Early phase and one to the Late phase.

These swords were identified as Byzantine by Attila Kiss<sup>63</sup> based on similarities to the sword found at Corinth in the ‘wandering soldier’s grave’.<sup>64</sup> Both of the early examples from the Carpathian Basin were found in its southern region<sup>65</sup> and dated to the first third of the 7th century (fig. 62/1–2).<sup>66</sup>

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58 Bóna 1982–83, 119.

59 Nagy 1901, 314–318; Somogyi 1987, 121.

60 Somogyi 1987, 121–122.

61 Simon 1991, 294–295, 307.

62 Balogh 2004, 264.

63 Attila Kiss (1987a, 194) defined Byzantine swords by using two attributes: double-edged blade and crossguard (and pommel) cast of copper alloy. The author latterly identified every edged-weapon as Byzantine that had a crossguard cast of copper alloy, whether single- or double-edged (Kiss 1996, 230); This view was also followed by Éva Garam (Garam 1991a, 142–145; Garam 2001, 158–159).

64 Davidson-Weinberg 1974, fig. 4.

65 Aradac–Mečka grave No. 85 (Nađ 1959, 62, Tab. xxv11/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196, Abb. 2, 203–204) and Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57).

66 Their chronology is based on the Fönlak type belt-set of grave No. 85 from Aradac–Mečka (Garam 2001, 119), and the purse-buckle of type Salona–Histria from the Kölked A burial, both dated to the first third of the 7th century (Garam 2001, 109).



The only late sword of this variant is known from Čierný Brod (fig. 62/3),<sup>67</sup> and is probably dated to the first half of the 9th century by analogy with a sword found in the Carolingian cemetery from Garabonc (9th century).<sup>68</sup>

### 1.1.3 Double-edged Ring-pommel Swords (E.I.C)

These swords are characterised by a ring-pommel at the end of the hilt, are always equipped with a crossguard, and their blade is narrow, double-edged and of lenticular cross section. Very few such swords have been found in Avar-age burials: only seven examples are known, all from the Early phase (map 29, fig. 63).<sup>69</sup> All of these swords were found in the Great Hungarian Plain except for the sword of Visegrád which was recovered from the riverbed of the Danube (map 29).<sup>70</sup> Most of the examples (four pieces) were found in the Danube-Tisza interfluvium,<sup>71</sup> while only two such swords are known from Transisya.<sup>72</sup>

The majority of these swords (four examples, 57.1%) are decorated by gold or silver foil on their ring-pommel, crossguard, locket, chape or suspension loops (E.I.C/2.b). The type has strong links to the single-edged ring-pommel swords (E.II.B/2.b), as demonstrated by the similar decoration about the hilt, crossguard and scabbard. These swords can also be regarded as ostentatious weapons, although there are considerable differences in the quality of the applied techniques.

67 Čierný Brod I.–Homokdomb grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12. Obr. 7; Zábójník 1995, No. 19).

68 Garabonc–Ófalu I. grave No. 55 (Szöke 1992a, 504, Taf. 20).

69 Csengele–Jórárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290. 15. kép 8); Deszk L grave No. 13 (H 22) (Csallány 1939, 137; Csallány 1972, 24–26, Abb. 4, Taf. VI–VII; Trogmayer 1984, 88. 12. lh; Simon 1991, 291. 11. kép 5. 18. kép; Lőrinczy 1994, 114–115); Kunszentmiklós–Bábony grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. v–vIII); Szegvár–Oromdűlő grave No. 903; Tiszavárkony–Hugyin-part grave No. 39 (Kiss 1962, 30–31. XXXVII. t. 4. XXXVIII. t. 1; Simon 1991, 309); Tiszavárkony–Hugyin-part grave No. 84 (Kiss 1962, 64–66. XXXVII. t. 6; Simon 1991, 309); Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7. 14. kép 5. 15. kép 9. 22. kép 2).

70 Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7. 14. kép 5. 15. kép 9. 22. kép 2.

71 Csengele–Jórárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290. 15. kép 8); Kunszentmiklós–Bábony grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. v–vIII); Tiszavárkony–Hugyin-part grave No. 39 (Kiss 1962, 30–31. XXXVII. t. 4, XXXVIII. t. 1; Simon 1991, 309); Tiszavárkony–Hugyin-part grave No. 84 (Kiss 1962, 64–66. XXXVII. t. 6; Simon 1991, 309).

72 Deszk L grave No. 13 (H 22) (Csallány 1939, 137; Csallány 1972, 24–26, Abb. 4, Taf. VI–VII; Trogmayer 1984, 88. 12. lh; Simon 1991, 291. 11. kép 5. 18. kép; Lőrinczy 1994, 114–115); Szegvár–Oromdűlő grave No. 903.





FIGURE 63 *Double-edged ring pommel swords: 1. Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.); 2. Szegvár-Oromdűlő, grave No. 903. Courtesy of G. Lőrinczy; 3. Kunszentmiklós–Bábony 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.).*

The sword covered by gold-foil from Kunszentmiklós–Bábony is of the finest quality regarding jewellery techniques, using granulation, filigree and glass inlay.<sup>73</sup> The swords from Csengele–Jójárt,<sup>74</sup> Szegvár–Oromdűlő grave No. 903 (fig. 63/2) and Visegrád (fig. 63/1)<sup>75</sup> were covered with silver foil. The decoration is mainly composed of plain silver-foil and silver bands of ribbed or pearl-ornament.

These swords can be regarded as prestige objects, as suggested by other accompanying grave goods, like the belt-set stamped of gold foil from the Csengele burial,<sup>76</sup> the belt-set with garnet-inlaid pseudo-buckles, gold rhyton, goblet, pitcher, rod terminal and glove covering at Kunbábony.<sup>77</sup> These finds also help to date these swords to the second half of the Early phase, in the second third of the 7th century.<sup>78</sup>

### 1.2 *Single-edged Swords (E.II)*

Single-edged swords are narrower, lighter, and made of less iron, and therefore were also probably cheaper. Their advantages are obvious. However, two disadvantages can be discerned within this form-group: only one cutting edge is available, and the triangular or pentagonal cross section is less suitable for thrusting, this latter problem being solved by the false edge, which was already a feature of the sabres. Three types can be identified based on the cross section of the blade and the shape of the hilt: single-edged swords (E.II.A), single-edged swords with ring-pommel (E.II.B), and single-edged swords with false edge (E.II.C) (fig. 11). Sub-types are distinguished based on the crossguard, the place of the tip, respectively hilt and scabbard decoration.

73 H. Tóth – Horváth 1992, 32–34, Taf. v–VIII.

74 Csallány 1939, 9–11, I. tábla 3–3a, II. tábla.

75 Tavas 1978, 175–200.

76 Stamped belt-mounts with lion representations, but the crescent-shaped mounts suggest a dating to the second half of the Early phase (Csallány 1939, 9–11).

77 Elvira H. Tóth considered these artefacts to be insignia of the qagan's power (H. Tóth – Horváth 1992, 97–209).

78 The chronology is subject to some debate: Dezső Csallány (1939, 10) originally dated the burial to the second third of the 7th century, while László Simon (1991, 290) dated it back to the last third of the 6th century. Csanád Bálint (1993, 239; Bálint 1995a, 301) and Éva Garam (2001, 138) dated the burial to the first third of the 7th century. However, it is important to note that the structure of the belt-set (crescent-shaped mount suggesting a complex back-mount) suggests a later date. Elvira H. Tóth even suggested a dating to the Middle phase for the Kunbábony burial (H. Tóth – Horváth 1992, 218), with which we disagree.

Single-edged swords were very popular during the Avar Age, with 236 examples known from the Carpathian Basin. Of these, the majority, 111 examples, are dated to the Early phase, 46 to the Middle and 70 examples to the Late phase. Single-edged straight blades remained continuously in use from the Early phase until the end of the Avar Age.

#### 1.2.1 Simple Single-edged Sword-blades (E.II.A)

The majority of Avar-age single-edged swords (E.II) belong to the type E.II.A (fig. 64): 182 edged-weapons out of 236 are classified to this type, which is 77.11% of all single-edged blades. Such blades begun to be used during the Early phase (90 swords) and remained popular during the Middle (37 examples) and Late (51 pieces) phases (maps 29–30). The main difference between the examples from the Early phase and the single-edged swords of the later periods is the existence of the crossguard: most of the early examples are without a crossguard, while during the Middle and Late phase the use of a crossguard became common.

##### 1.2.1.1 *Single-edged Swords without Crossguard (E.II.A/1)*

The majority of the examples of type E.II.A belong to the sub-type without crossguard (E.II.A/1): 135 such single-edged swords were found in the Avar-age Carpathian Basin (57.2 per cent of all single-edged swords). Most of these weapons are dated to the Early phase (90 examples, 66.66%). Only sixteen swords are dated to the Middle phase, while 25 examples belong to the Late phase, which means that 43.7 per cent of all Middle phase single-edged swords did not have a crossguard, while the rate for the examples from the Late Avar period is only 49.01 per cent. These single-edged swords were frequently decorated with precious metal sheets on their hilt and scabbard during the Early phase, as demonstrated by 41 swords (E.II.A/1.b) which such ornamentation, whilst this practice was unknown during the Middle and Late phases (map 30, figs. 65–68).

Their geographical distribution in the Early phase is uniform, 35 examples (44.8%) being known from Transdanubia, 27 from the Danuba-Tisza inter-fluve (34.6%) and 16 swords from Transtisia (20%) (map 30). The example of Sânpetru German is of considerable chronological significance, since it was dated by a solidus of Heraclius and Heraclius Constantine (613–643) which suggests a 7th century date.<sup>79</sup>

79 Besides the coin, a similar date is suggested by the earring of great globular pendant and the belt-set of type Fönlak (Garam 1992, 144. Taf. 53–55).

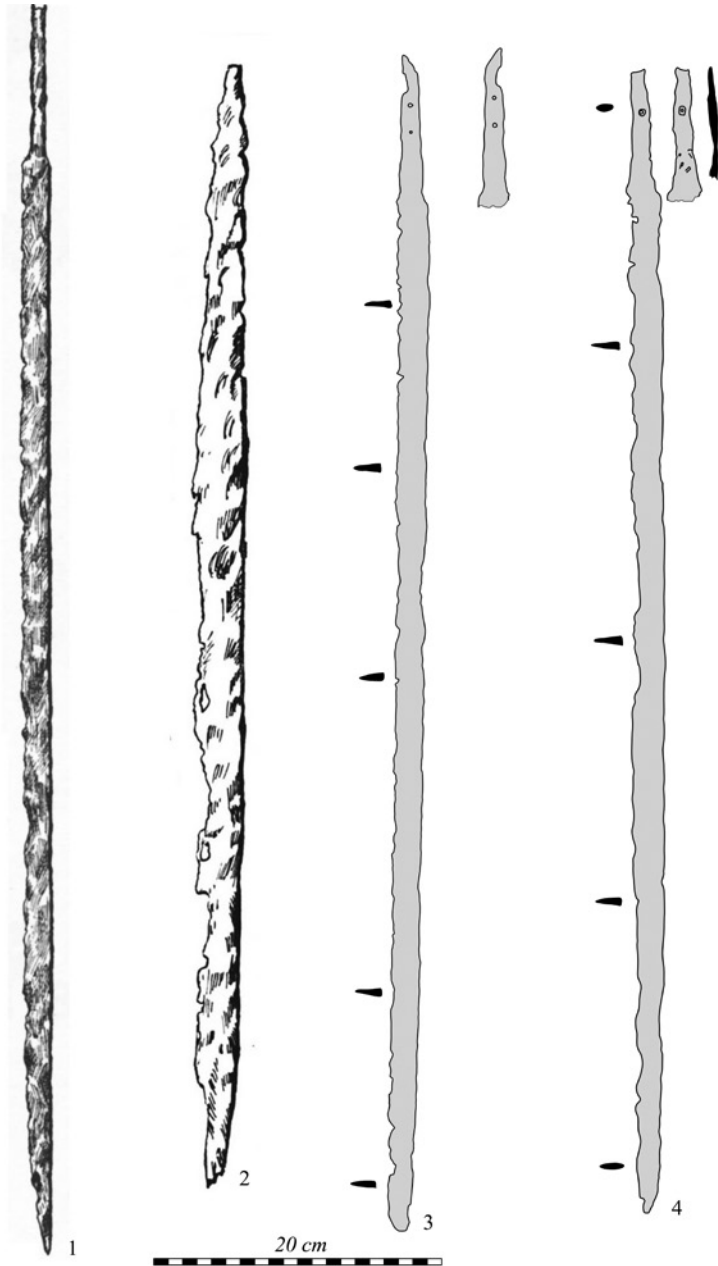


FIGURE 64 *Single-edged swords (E.II.A).* 1. Cserkút-szőlők, stray find (Kiss 1977, 18, Fig. 1/17; Simon 1991, 290.); 2. Gyód-Máriahegy, grave No. 67 (Kiss 1977, 41, Fig. IX.); 3. Győr-Téglavető-dűlő, grave No. 494 (Börzsönyi 1905, 20–22; Fettich 1943, 31.); 4. Győr-Téglavető-dűlő, grave No. 484 (XJM 53.278.1379).

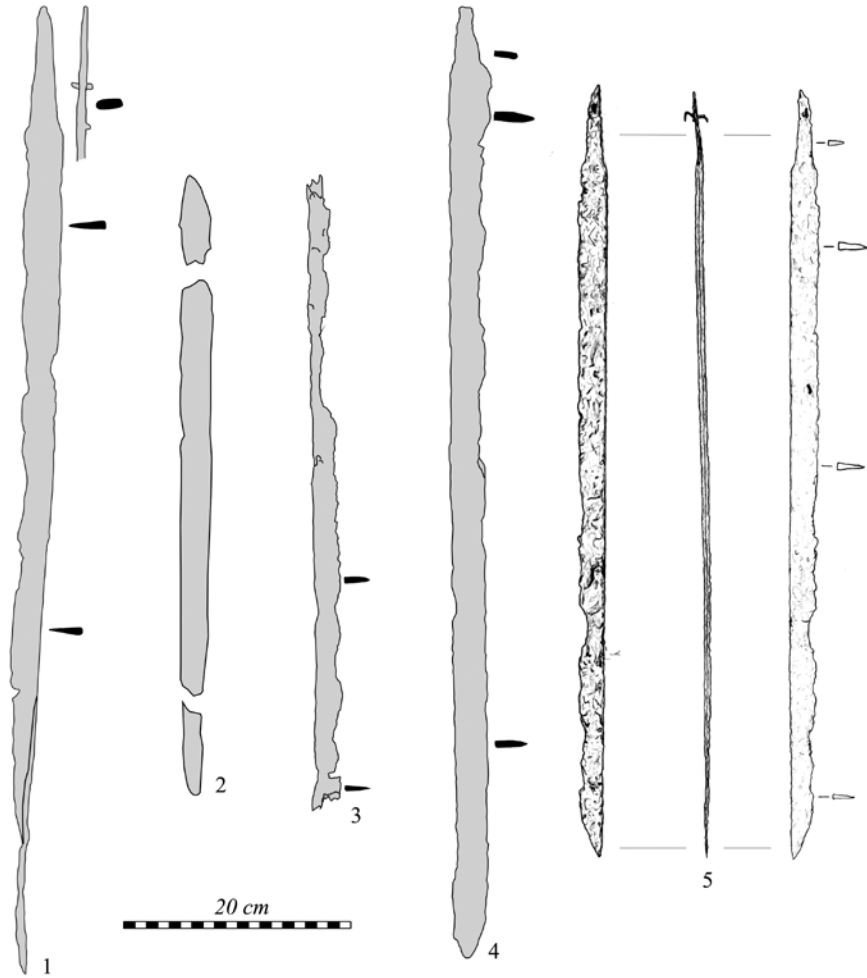


FIGURE 65 *Single-edged swords (E.IIA)* 1. Környe, stray find (Salamon – Erdélyi 1971, 30, Taf. 34/3; Simon 1991, 298.); 2. Kiskőrös–Rákóczi u. 49. (László 1940, 150, XXIV. t. 16.); 3. Kiskőrös–Városalatt, grave No. 193 (Horváth 1935, 50.); 4. Környe, grave No. 35 (Salamon – Erdélyi 1971, 17, Taf. 33/6.; Simon 1991, 296.); 5. Paks–Gyapa T033, grave No. 12.

Most of the 12 Middle phase examples were found on the Great Hungarian Plain (seven examples), the rest being distributed across Transdanubia, the Vienna Basin and Southwestern Slovakia. These swords are dated by belt-sets found associated in the burials.<sup>80</sup>

80 The grave No. 84 of Jászapáti is dated by a belt-set stamped of gilded copper alloy with quadrangular mounts and a stamped hairgrip (Madaras 1994, 33–34. Taf. XII–XIII), while

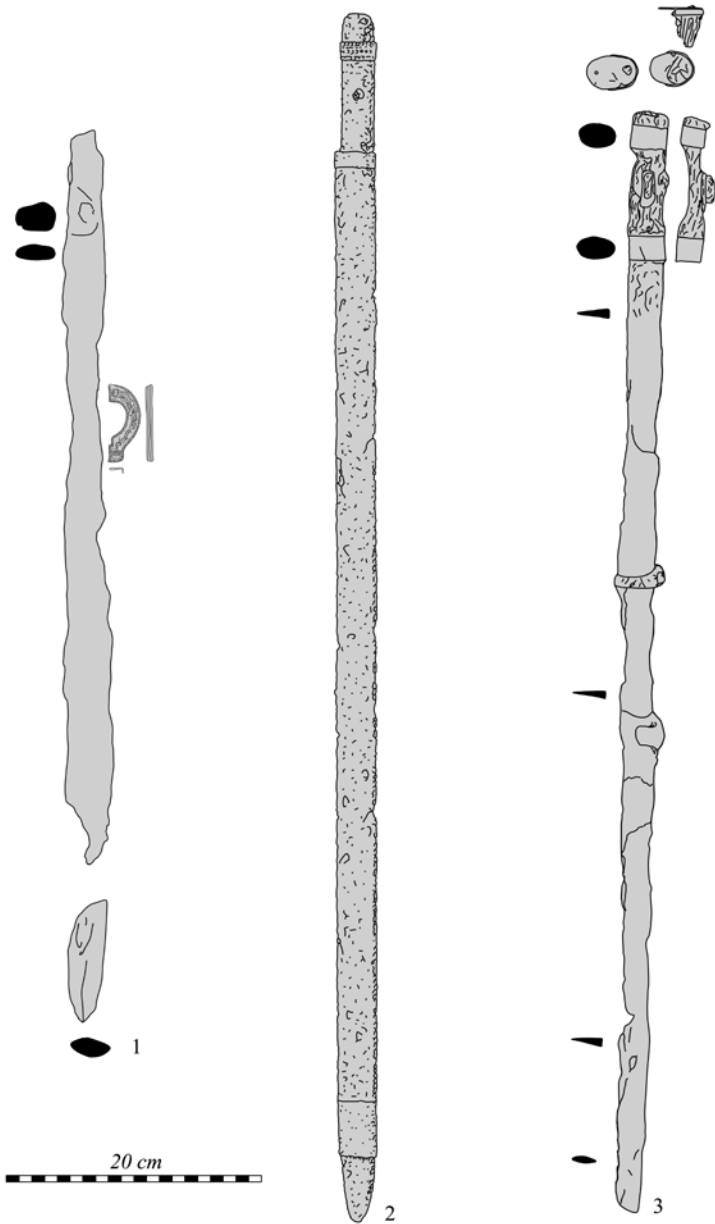


FIGURE 66 *Single-edged swords (E.IIA)* 1. Kölked–Feketekapu A, grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.); 2. Kölked–Feketekapu A, grave No. 227 (Kiss 1996, 69, Taf. 52/8.); 3. Kölked–Feketekapu B, grave No. 106 (Kiss 2001, 43–44, Taf. 32/9.).

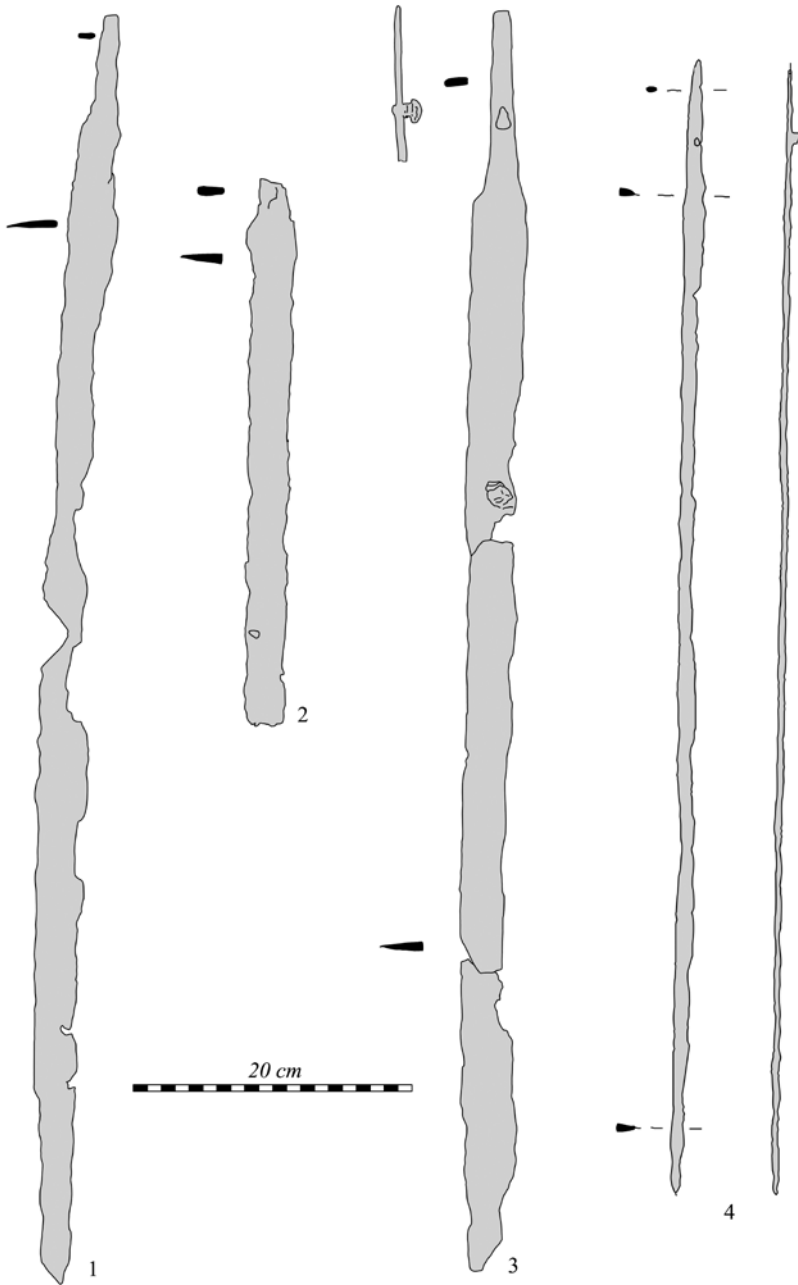


FIGURE 67 *Single-edged swords (E.I.A.): 1. Környe, grave No. 78 (Salamon – Erdélyi 1971, 21, Taf. 33/9, Taf. 12/51; Simon 1991, 296.); 2. Környe, grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); 3. Környe, grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 32/3, Abb. 4/2; Simon 1991, 297, 16. kép 18.); 4. Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428.).*

The distribution of the Late phase examples are uniform, being found in Southwestern Slovakia (eight examples), Transdanubia (five pieces) and the Great Hungarian Plain (nine examples). These swords are dated to the Late phase by belt-sets cast of copper alloy.<sup>81</sup>

According to the interpretation of László Simon, the reduction of the blade-width is a chronological variable,<sup>82</sup> however, this typological observation can only be used with some restrictions, since the average width of Middle and Late phase blades (3.5 cm) is the same as the average blade width of single-edged swords from the Early phase.

An Early phase variant of these swords is decorated with precious metal sheets on their hilt and scabbard (41 examples, 52.56 per cent of the Early phase examples). The decoration of both the single- and double-edged swords is the same, suggesting that the form of the blade has no bearing on its occurrence. These swords are evenly distributed both in Transdanubia<sup>83</sup> and on Great Hungarian Plain,<sup>84</sup> but no examples were found in Transylvania. These swords

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the grave No. 186, 257 and 326 of Tiszafüred are dated by a similar belt-set (Garam 1995, 28–30, 37, 46. Taf. 73, 78, 83) to the Middle phase. The grave No. 35B of Leobersdorf is dated by a stamped belt-set with a strap-end of interlace ornament to the same period (Daim 1987, 227, Taf. 30).

- 81 The grave No. 633 of Devínska Nová Ves is dated by cast belt-set composed of rectangular mounts with griffon-ornament to the first half of Late phase (Eisner 1952, 139–140, Obr. 73). The grave No. 44 of Čunovo is dated by its cast belt set of flat-tendrigr ornament to the second half of the 8th century (Hampel 1905, II. 147). The grave No. 36 is dated to the 8th century by its gilded cast belt-mounts and harness-mounts of griffon-head shaped.
- 82 Simon 1991, 283.
- 83 19 such swords (54.28%) are known from Transdanubia: Bányog–Gyűrhegy (Lovas 1929b, 253; Fettich 1943, 7; Simon 1991, 286), Csákberény–Orondpuszta (Kiss 1962, 70; Simon 1991, 290), Győr–Ménfőcsanak grave No. 643; Kölked–Feketekapu A grave No. 107 and 227 and B 106 (Kiss 1996, 41, 232, Taf. 34/1, 69, Taf. 52/8; Kiss 2001, 43–44, Taf. 32/9), Környe grave No. 78, 99 and 149 (Salamon – Erdélyi 1971, 21. Taf. 12, Taf. 33/9; 23. Taf. 16. Taf. 32/2, Abb. 4/3, 29, Taf. 26, Taf. 32/3. Abb. 4/2), Mór grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1), Pókaszepetk grave No. 332 (Sós – Salamon 1995, 166–167. Pl. XX), Szárazd (Kovács 2001, 185, 187–190. 7. kép 10), Tárnok (Garam 1991b, 222, 3. kép, 5. kép 2), Vértesacsca (Kralovánszky 1969, 48–49), Zamárdi grave No. 193, 565, 1493), Zillingtal grave No. D-3 (Mehofer 2006, 163. Abb. D).
- 84 21 such swords (45.71%) were found on the Great Hungarian Plain: Čoka–Kremenjak grave No. 45 (Kovrig – Korek 1960, 262, fig. 6); Csanytelek–Felgyői határút grave A (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173. 28. kép); Csengőd–Páhipuszta (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25); Csépa (Simon 1991, 290), Fajsz–Garadomb grave No. 2 (Balogh – Kóhegyi 2001, 333–363), Gátér grave No. 212 and stray find (Kada 1906, 215. 218; Fettich 1926a, 8. 10. x. t. 27, 8. fig. 20), Jászboldogháza (Madaras 1982, 64;



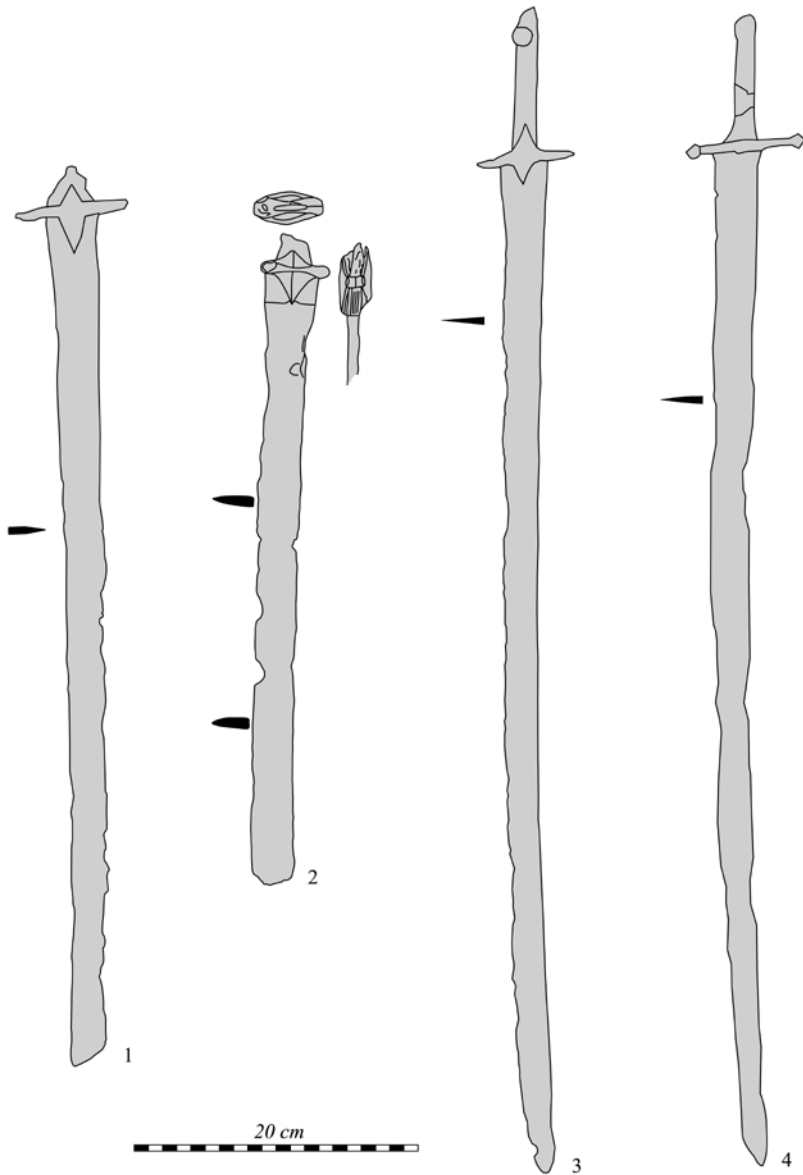


FIGURE 68 *Single-edged swords with crossguard (E.II.A/2)* 1. Aiudul de Sus (Horedt 1956, 396; Horedt 1958a, 93, Fig.17/3; Horedt 1968, 71; Bóna 1986a, 116.; Bóna 1989, 88.); 2. Baracs-Ágoacs-tanya (Nagy 1901b, 285; Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, No. 244; Bóna 1982–83, 110–111.); 3. Brodski Drenovac–Plana, grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV.); 4. Budapest X. Rákosszentimre, Ejtőernyőstorony, grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b.).

were mostly decorated with silver foil. Only two examples are covered with gold-foil: the sword from Csepel–Kavicsbánya<sup>85</sup> and grave No. 1 at Zsámbok.<sup>86</sup> The decoration of both swords is similar to that of the ring-pommel swords with pearl-rows, whereas only the single-edged sword with silver covering from grave No. 150 at Csákberény shows similar characteristics.

The classification of the gold and silver covering of the swords, and their significance for the social history of the Avars, will be discussed in later chapters. Their function as ostentatious weapons seems highly probable.

#### 1.2.1.2 *Single-edged Swords with Crossguard (E.II.A/2)*

Single-edged swords with crossguard are common weapons during the Avar Age, 47 such examples being known (map 31, figs. 69–71). These swords have crossguards of several types, the classification of which will be presented in a separate chapter. The geographical distribution of these finds is even, and can be found in every region of the Carpathian Basin.

Single-edged swords with crossguard are rare finds during the Early phase<sup>87</sup> but they became increasingly popular during the Middle (21 examples) and Late (26 examples) phases. They remained in used from the middle of the 7th century until the end of the Late phase.

#### 1.2.2 *Single-edged Ring-pommel Swords (E.II.B)*

A special type of single-edged sword has a ring-pommel,<sup>88</sup> which was usually made from the iron projection of the hilt, though in some cases it was

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Simon 1991, 293), Mali Idoš grave No. 84 (Gubitz 1911, 125; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 152. LXXIX; Simon 1991, 301), Kunpeszér grave No. 3, 8, 9, 27, 30.A (H. Tóth 1984, 12; Simon 1991, 299), Maglód (Garam 2005, 414, 9–10. kép, 427–428), Szeged–Fehértó A grave No. 26, 34, B 12, (Madaras 1995b, 17, Pl. 4/14; 18, Pl. 6/11, 138, Pl. 2–3), Szeged–Kundomb grave No. 180 (Salamon – Sebestyén 1995, 28. 55, Pl. 25/5), Zsámbok grave No. 1 and 2 (Garam 1983, 140. Abb. 1/1–2. Abb. 6/1–2. Abb. 7; 144. Abb. 5/7–9. Abb. 6/3. Abb. 8).

85 Nagy 1998, I. 178–180.

86 Garam 1983, 140. Abb. 1/1–2. Abb. 6/1–2. Abb. 7.

87 Two examples, the dating of which is unsure: Mali Idoš grave No. 72 (Gubitz 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301. 16. kép 16); Pilisborosjenő–Téglagyár (Jelentés 1907, 43–44; Kovrig 1955a, 37; MRT 7. 141, 15/2. Lh; Simon 1991, 304) (MNM 71/1906.1).

88 Biharkeresztes–Lencsésát (Mesterházy 1987, 222, 6. kép/1–2; Bóna 1990, 113–124; Simon 1991, 287, II. kép 1, 21. kép 3); Bócsa (Fettich 1937, 123. taf. CXIX. 1; Fettich 1951, 71. Taf. LI; László 1955, 228–230; XLIII. T. I. 11–12. XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57. Taf. 4–21); Bogojevo I grave No. 10 (Cziráky 1899, 422–423; Velenrajter 1960, 180–181, 183, I: 1; Dimitrijević – Kovačević – Vinski 1962, 38–39, Abb.12; Korošec 1959, 103–117. Abb. 1–21. Taf. 1; Simon 1991, 287); Deszk H grave No. 22 (Kláralfalva grave No. 13)

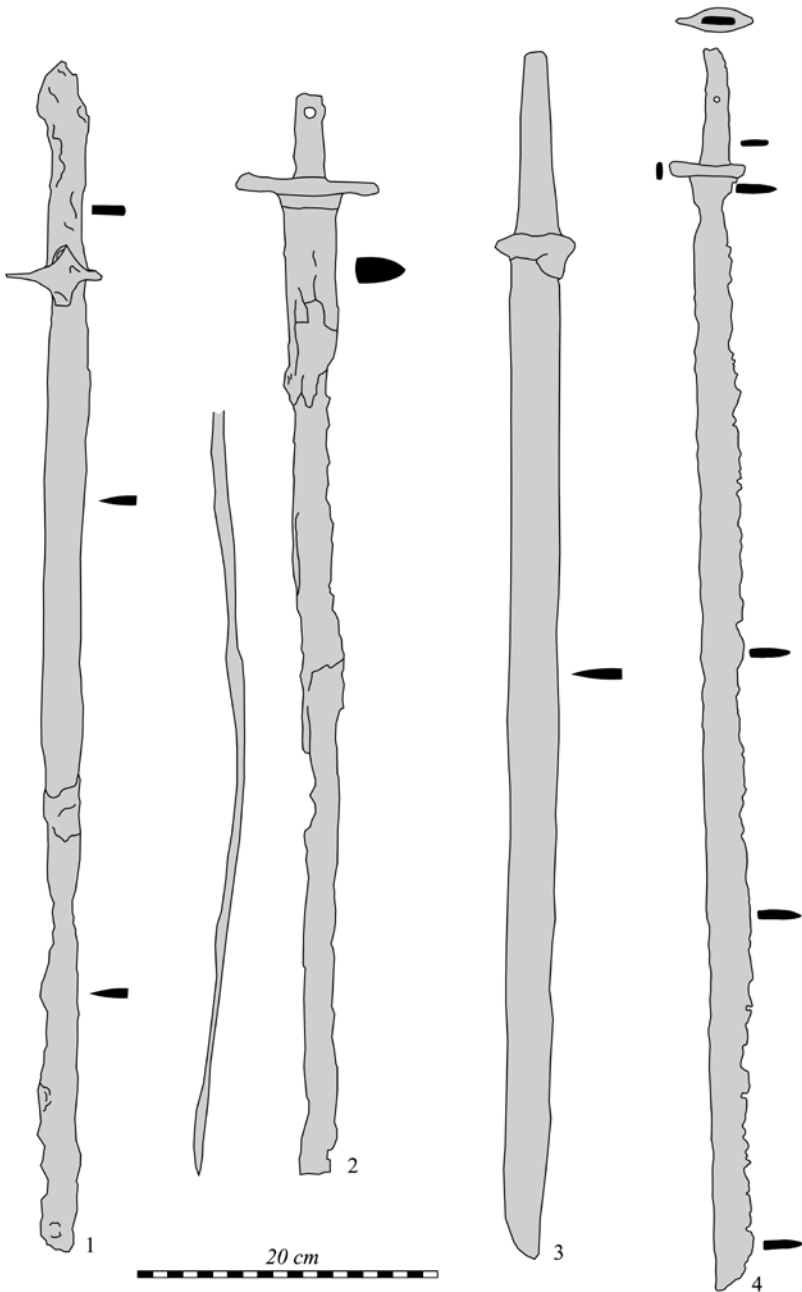


FIGURE 69 *Single-edged swords with crossguard (E.IIA/2)* 1. Komárno–8 Shipyard, grave No. 72 (Trugly 1987, 265–266, Taf. XVI/17.); 2. Komárno–8 Shipyard, grave No. 139 (Trugly 1993, 211–212, XLVII/13.). 3. Űllő I. – Disznójárás, grave 'A' (Horváth 1935, 31, XXII/7.); 4. Űröm–Borosjenői téglagyár (MNM 71/1906.1).

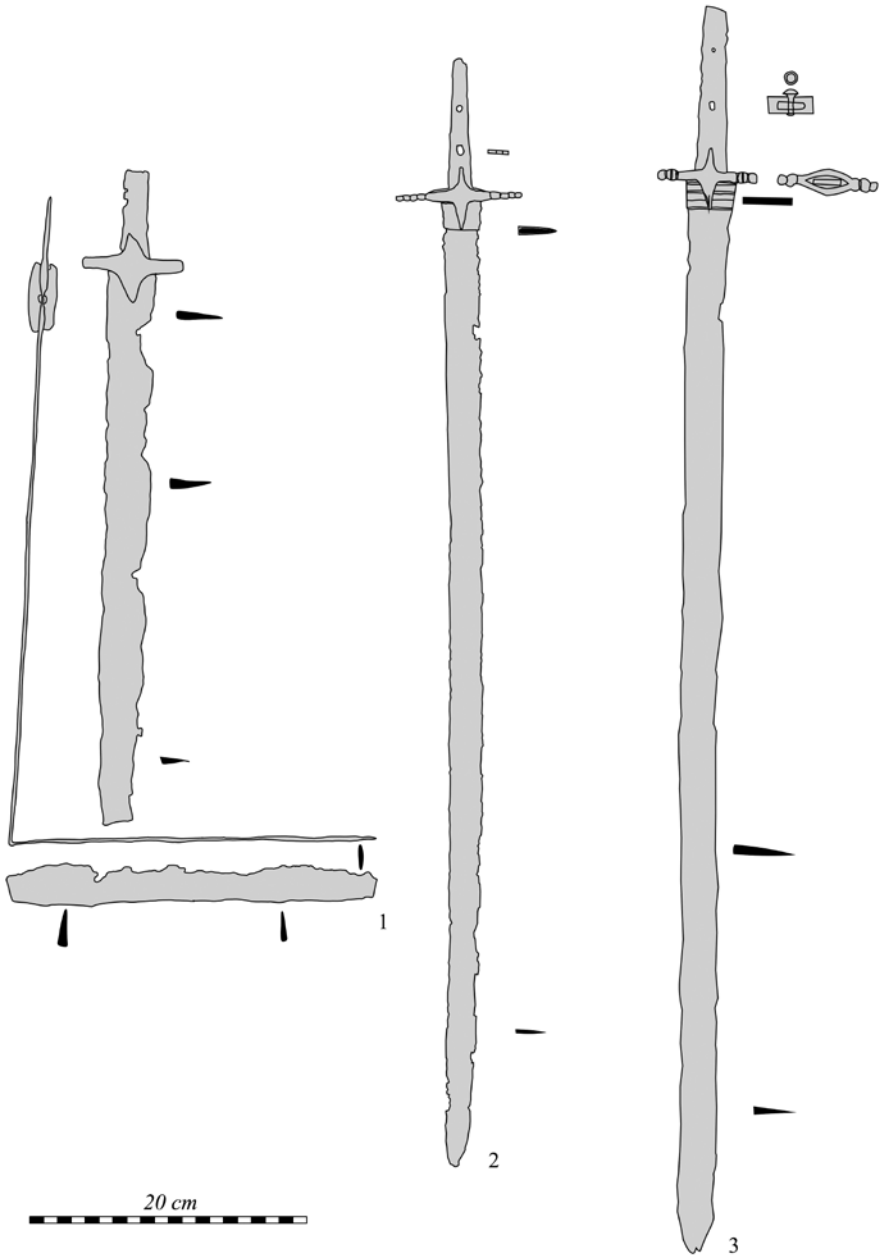


FIGURE 70 *Single-edged swords with crossguard (E.II.A/2)* 1. Váchartyán–Gosztonyi szőlőhegy, stray find (Ferenczy 1963, 101, 14 kép 3.); 2. Zalakomár–Lesvári dűlő, grave No. 210; 3. Zalakomár–Lesvári dűlő, grave No. 135 (Szóke 2002, 80, 14.).

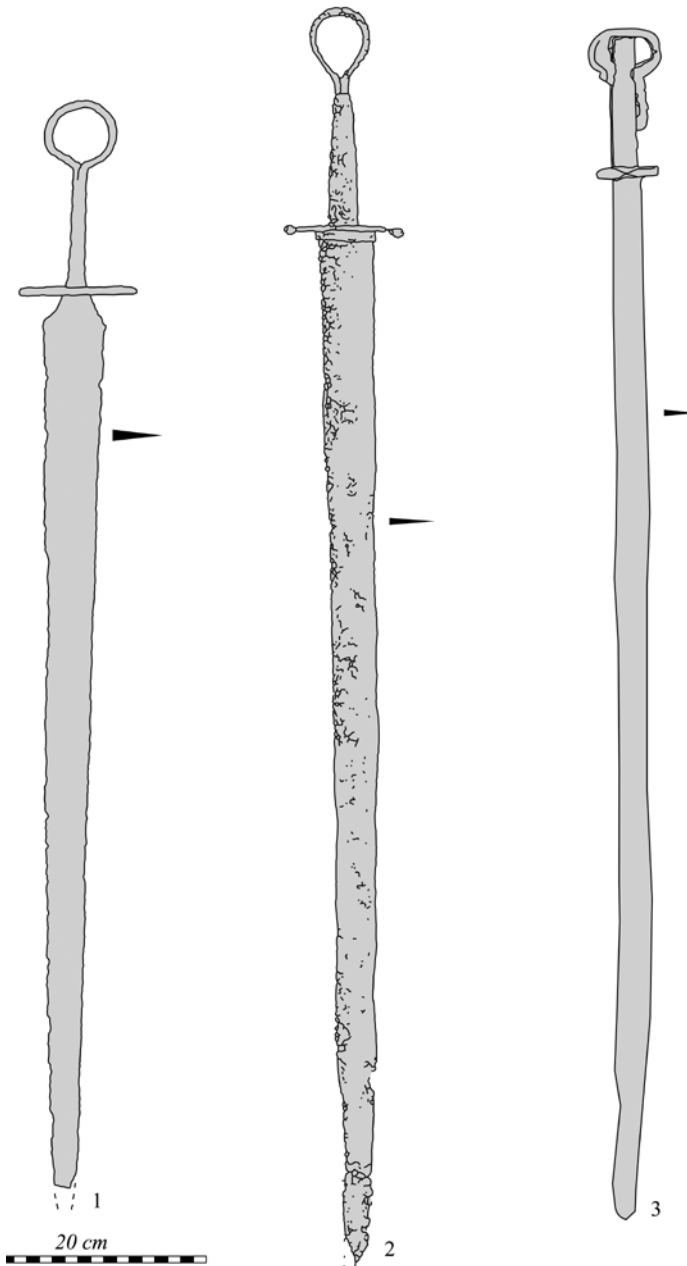


FIGURE 71 *Single-edged ring-pommel swords (E.II.B): 1. Biharkeresztes–Lencsészát (Mesterházy 1987, 222, 6. kép/1–2; Bóna 1990, 113–124; Simon 1991, 287, II. kép 1. 21. kép 3.); 2. Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.); 3. Valea lui Mihai–Rétaľj (Németi 1983, 145–146, Fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235, Fig. 265/5.).*

riveted directly on to the hilt, like the ring-pommel cast of copper alloy from Mandelos,<sup>89</sup> and the ring-pommel forged of iron rod from Valea lui Mihai.<sup>90</sup> These ring-pommel swords were always equipped with a crossguard. Two variants can be identified, those that were undecorated, and those where part of these swords were covered with precious metal sheets, about their ring-pommel and scabbard (map 32, figs 72–73).

Simple variants of the ring-pommel sword are distributed more evenly than their ostentatious variants: they are known from the southern part of the Great Hungarian Plain,<sup>91</sup> Transtisia region,<sup>92</sup> Vojvodina and Sremska (Sirmium) in Serbia,<sup>93</sup> and Transdanubia (map 32).<sup>94</sup> Exact analogies for the only Transdanubian ring-pommel sword, from Sopron, have been found in northeastern Bulgaria<sup>95</sup> and Caričin Grad.<sup>96</sup> These swords are only known from the Early phase.

Half of the known examples (six pieces) were decorated with precious metal sheets on their ring-pommel, hilt, crossguard, locket, chape and suspension loops (fig. 72). The gold covering is more frequent (four examples)<sup>97</sup> than

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(Csallány 1972, 24); Kecel–Schwacho föld (László 1955, 232–233, fig. 64. LI–LII. t. LIII. t. 25; Biczó 1984, 27. 56. 15. ábra, 173. lh; Simon 1991, 294, 15. kép 2); Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Makó–Ipari Park 4. lh. O. 177 S. 183; Mandelos (Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1, Pl. III/1–3; Mrkobrad 1980, 152. LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10); Nagykőrös–Szurdok (Simon 1983, 9–43. 6–20. kép, II–VII. t; Simon 1991, 302–303, 10. kép 2, 15. kép 6. 17. kép 2. 23. kép); Sopron–téglagyári agyagbánya (Gömöri 1976, 144–145. 10. kép 3. 11. kép 3. 20. kép, 21. kép 2; Simon 1991, 304); Szegvár–Oromdúló grave No. 335; Szegvár–Oromdúló grave No. 540; Valea lui Mihai–Rétalj (Németi 1983, 145–146. fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235. Pl. 265/5); Vereşmort (Rustoiu – Ciuta 2008, 74–75; Cosma et al. 2013, 89–96; fig. 65.1).

89 Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1, Pl. III/1–3.

90 Németi 1983, 145–146. fig. 8/1.

91 Deszk H grave No. 22 (Klárafalva grave No. 13) (Csallány 1972, 24).

92 Biharkeresztes–Lencsésbát (Mesterházy 1987, 222, 6. kép/1–2), Valea lui Mihai–Rétalj (Németi 1983, 145–146. fig. 8/1).

93 Bogojevo (Gombos) I grave No. 10 (Cziráky 1899, 422–423); Mandelos (Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1, Pl. III/1–3).

94 Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145. 10. kép 3. 11. kép 3. 20. kép, 21. kép 2).

95 Thanks go to Bojan Totev for sharing this information.

96 Biharkeresztes–Lencsésbát (Mesterházy 1987, 222, 6. kép/1–2); Deszk L grave No. 13 (H 22) (Csallány 1939, 137. Csallány 1972, 24–26, Abb. 4, Taf. VI–VII; Simon 1991, 291. 11. kép 5. 18. kép); Makó–Ipari Park 4th site, grave No. 177/183; Szegvár–Oromdúló grave No. 335, 540, 903; Valea lui Mihai (Németi 1983, 145–146. fig. 8/1).

97 Bócsa (Garam 1993, 53–57. Taf. 4–21); Kecel–Schwacho föld (László 1955, 232–233, fig. 64. és LI–LII. t. LIII. t. 25); Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6); Nagykőrös–

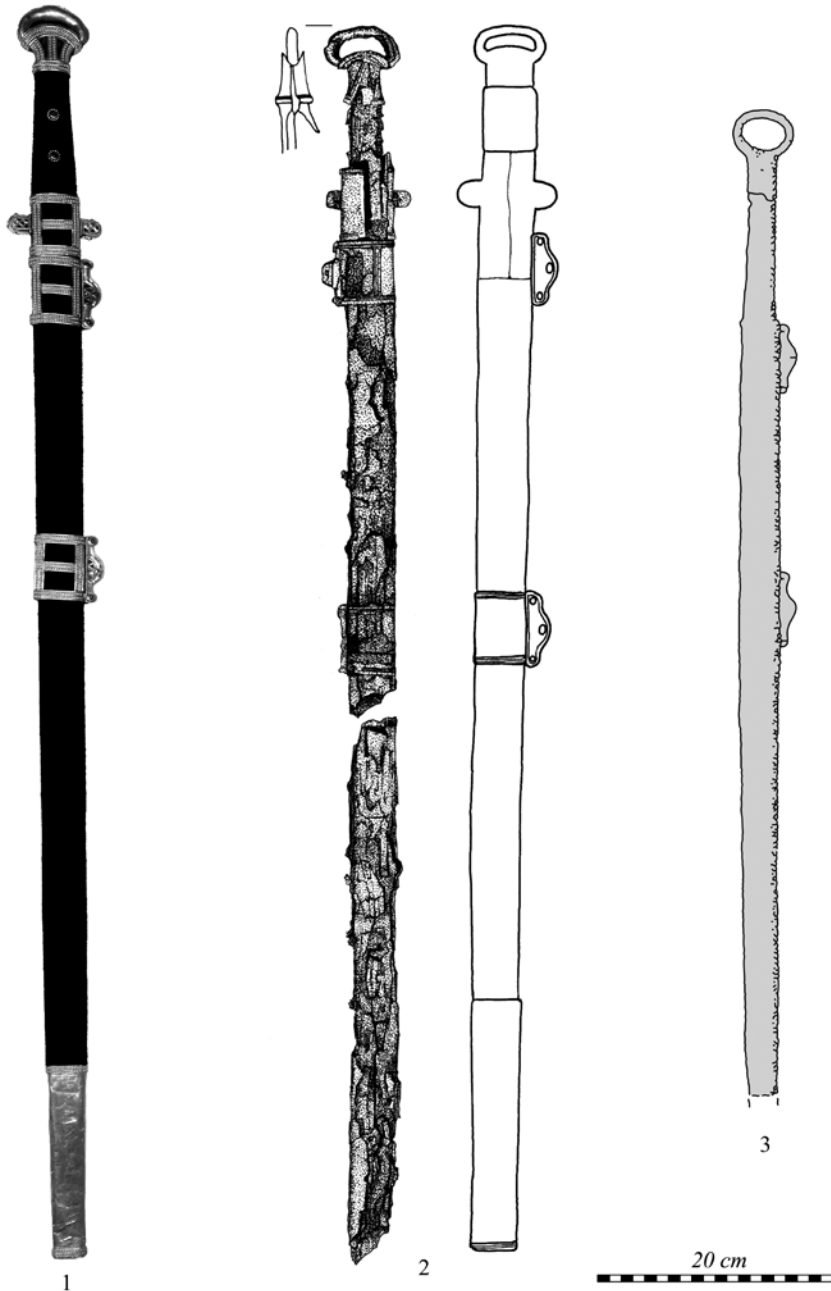


FIGURE 72 *Single-edged ring-pommel swords (E.II.B):* 1. Bócsa (Fettich 1937, 123, Taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12., XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 2. Szegvár–Oromdűlő grave No. 335, courtesy of G. Lőrinczy; 3. Mandelos (Ercegović – Pavlović 1973–74, 108, Fig. 1, 1. t. 1, Fig. III/1–3; Mrkobrad 1980, 152., LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.).

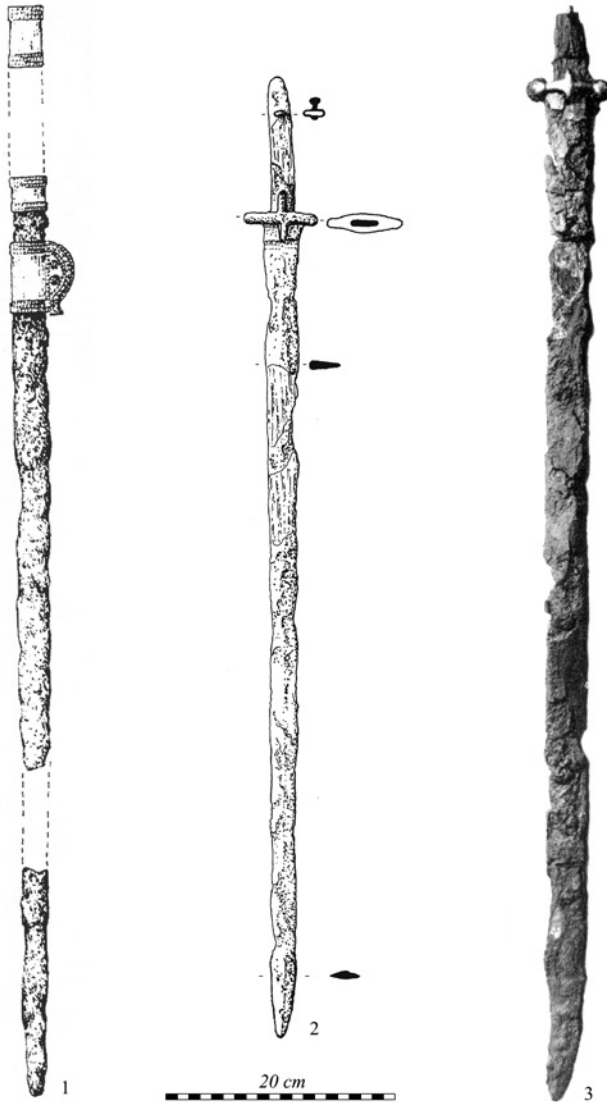


FIGURE 73 *Single-edged swords with false edge (E.I.C):* 1. Budapest XXI. Csepel-Kavicsbánya (Fettich 1926b, 2, Fig. v/1-4; Marosi - Fettich 1936, 95; László 1942, 787-788, Abb. 40; László 1955, 135; Nemeskéri 1955, 194, 208; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1.5; Lipták 1983, 61, 91-94; Simon 1983, 40-42; Simon 1991, 288-289, 16. kép 13; Garam 1993, No. 11, 59-60, Taf. 25; Nagy 1998, I. 178-180.); 2. Čataj I. - Zemanské-Gezove, grave No. 60 (Hanuliak - Zábajník 1982, 498; Zábajník 1995, No. 17, Abb. 4.); 3. Dunaijváros-Öreghegy, Rákits D. földje (Dunapentele); grave No. 7 (1.) (Hekler 1909, 97-105; Fettich 1926a, 27-28.; Marosi - Fettich 1936, 9-17, Taf. I-VI; Bóna 1970, 250, 3-8; Bóna 1971a, 249-250 (33-34); 271 (51); Bóna 1982-83, 62-64, No. 20a-d, Taf. 27-28, 35.9; Garam 1994-95, 134, 8. kép.).



the silver (three examples).<sup>98</sup> Characteristic of decoration with gold or silver foil is the frame of pearl-line ornament, and the precious stone or glass inlay on the crossguard (CG.3) and the triple-arched suspension loop (S.6) which are common on this type of weapon.

The single-edged ring-pommel type was originally termed the 'Csengele type' by Dezső Csallány, and he dated them to the second half of the Early phase.<sup>99</sup> The reconstructions of Gyula László added new examples to this variant,<sup>100</sup> and subsequently considered these swords in their social context, and regarded them as insignia.<sup>101</sup> The type later received an ethnic interpretation and was identified as a sign of the Inner Asian component of the Avars.<sup>102</sup> Ring-pommel swords were further studied by László Simon with the reconstruction of the Nagykőrös sword,<sup>103</sup> and their social significance received particular attention in respect of the burial at Kunbábony which was interpreted as a qagan's grave.<sup>104</sup>

The main distribution area of this type lies in the Danube – Tisza inter-fluve<sup>105</sup> and Transisya<sup>106</sup> but examples are also known from Sirmium<sup>107</sup> and Transylvania (map 32).<sup>108</sup> These swords were not found in Transdanubia. The distribution area of this type overlaps with that of the swords decorated with gold foil. According to a number of interpretations the Avar qagan's seat was situated in this area.

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Szurdok (Simon 1983, 9–43. 6–20. kép, II–VII. t).

- 98 Mandelos (Ercegović – Pavlović 1973–74, 108, fig. 1. i. t. 1); Szegvár-Oromdúló grave No. 335 and 540.
- 99 Csallány 1939, 141.
- 100 Based on the swords of Kecel and Bócsa, found in 1935, Gyula László reconstructed the original layout of the gold foils of Kunágota (László 1938, 55–86; László 1950, 31–33).
- 101 According to the view of Gyula László the swords with gold coverings from Bócsa and Kecel were insignia of princely rank (László 1955, 231–232. 235).
- 102 Based on ring-pommel swords from Far Eastern sites (mainly Korea) (Ito 1971; Werner 1988) their Inner Asian origin was suggested by Csanád Bálint (1978, 206), István Bóna (1980, 51; Bóna 1984a, 310–311) and László Simon (1991, 273).
- 103 László Simon (1983) interpreted the sword from Nagykőrös as an insignia, however, based on its small size he regarded it a child's sword.
- 104 H. Tóth 1972a, 167; H. Tóth – Horváth 1992).
- 105 Bócsa (Garam 1993, 53–57. Taf. 4–21); Kecel (László 1955, 232–233, fig. 64. LI–LII. t. LIII. t. 25), Nagykőrös (Simon 1983, 9–43. 6–20. kép, II–VII. t).
- 106 Szegvár-Oromdúló grave No. 335 and 540.
- 107 Mandelos (Ercegović – Pavlović 1973–74, 108, fig. 1. i. t. 1).
- 108 Rustoiu – Ciuta 2008, 74–75.

This type is dated to the Early phase, and was usually accompanied by characteristic grave goods of the Bócsa – Kunbábony horizon,<sup>109</sup> and can therefore be dated to the second half of this Early phase.<sup>110</sup>

### 1.2.3 Single-edged Swords with False Edge (Proto-sabre) (E.II.C)

The blade of this type is straight and single-edged but its tip being double-edged, a false edge having been sharpened on the back of the blade at its tip (map 33, figs. 74–75). These blades can be equipped with crossguard (seven examples)<sup>111</sup> but a number without crossguard are also known (nine pieces).<sup>112</sup> Most of the examples equipped with crossguards belong to the Late phase (five pieces), while the single-edged swords with false-edge and no crossguard have a more even chronological distribution: four examples belong to the Early phase,<sup>113</sup> four to the Middle<sup>114</sup> and one to the Late phase.<sup>115</sup>

This type played a significant role in the history of research on Avar weapons, since it was regarded as a transitional type between single-edged swords and sabres. It was first identified by János Győző Szabó<sup>116</sup> but it was László

109 Belt-sets with pseudo-buckles, rhython and goblet.

110 László 1955, 232; Garam 1993, 25; Gavritukhin 2001, 154–155; Gavritukhin 2005, 406–411; Gavritukhin 2008, 82–85. The Bócsa horizon is parallel to the Pereshchepina horizon, verifying its late dating: (Kiss 1991, 193–210).

111 Čataj I.–Zemanské-Gejzove grave No. 60 (Hanuliak – Zábójník 1982, 498; Zábójník 1995, No. 17, Abb. 4); Komárno–8 Shipyard grave No. 30, 71 and 72 (Trugly 1987, 256. Abb. 3, Taf. v/6, 265. Taf. xv/15, 265–266. Taf. xvi/17); Tarnaméra, Urak dúlő grave No. 'X' (Szabó 1965, 42. VIII. t. 1–3); Valalíky–Všechsvátých grave No. 85/83.

112 Budapest XXI. Csepel–Kavicsbánya (Nagy 1998, I. 178–180); Győr–Téglavető-dűlő grave No. 72 (Börzsönyi 1902, 21; Fettich 1943, 16–17); Hajdúdorog–Városkert utca 7. grave 'A' (Kralovánzsky 1992, 136. 138. 10. ábra); Keszthely, városi temető, stray find (Lipp 1885b, 30, 27–28. rajz); Košice–Šebastovce grave No. 161 (Budinský-Krička – Točík 1991, 38, Taf. xxii/16); Szeged–Fehértó B grave No. 61 (Madaras 1995b, 143. Pl. 12/8–9); Üllő, Kund collection grave No. 1 (MNM 9/1951.1); Váchartyán–Gosztonyi szőlőhegy grave No. 6 (Ferenczy 1963, 85, 14. kép 1); Želovce grave No. 78 (Čilinská 1973, 49, Taf. xiv/20–21).

113 Budapest XXI. Csepel–Kavicsbánya (Nagy 1998, I. 178–180); Győr–Téglavető-dűlő grave No. 72 (Börzsönyi 1902, 21; Fettich 1943, 16–17); Hajdúdorog–Városkert utca 7. grave 'A' (Kralovánzsky 1992, 136. 138. 10. ábra); Keszthely, városi temető, stray find (Lipp 1885b, 30, 27–28. rajz).

114 Szeged–Fehértó B grave No. 61 (Madaras 1995b, 143. Pl. 12/8–9); Üllő, Kund gyűjtemény grave No. 1 (MNM 9/1951.1); Váchartyán–Gosztonyi szőlőhegy grave No. 6 (Ferenczy 1963, 85, 14. kép 1); Želovce grave No. 78 (Čilinská 1973, 49, Taf. xiv/20–21).

115 Košice–Šebastovce grave No. 161 (Budinský-Krička – Točík 1991, 38; Taf. xxii/16).

116 Szabó 1965, 42. VIII. t. 1–3.

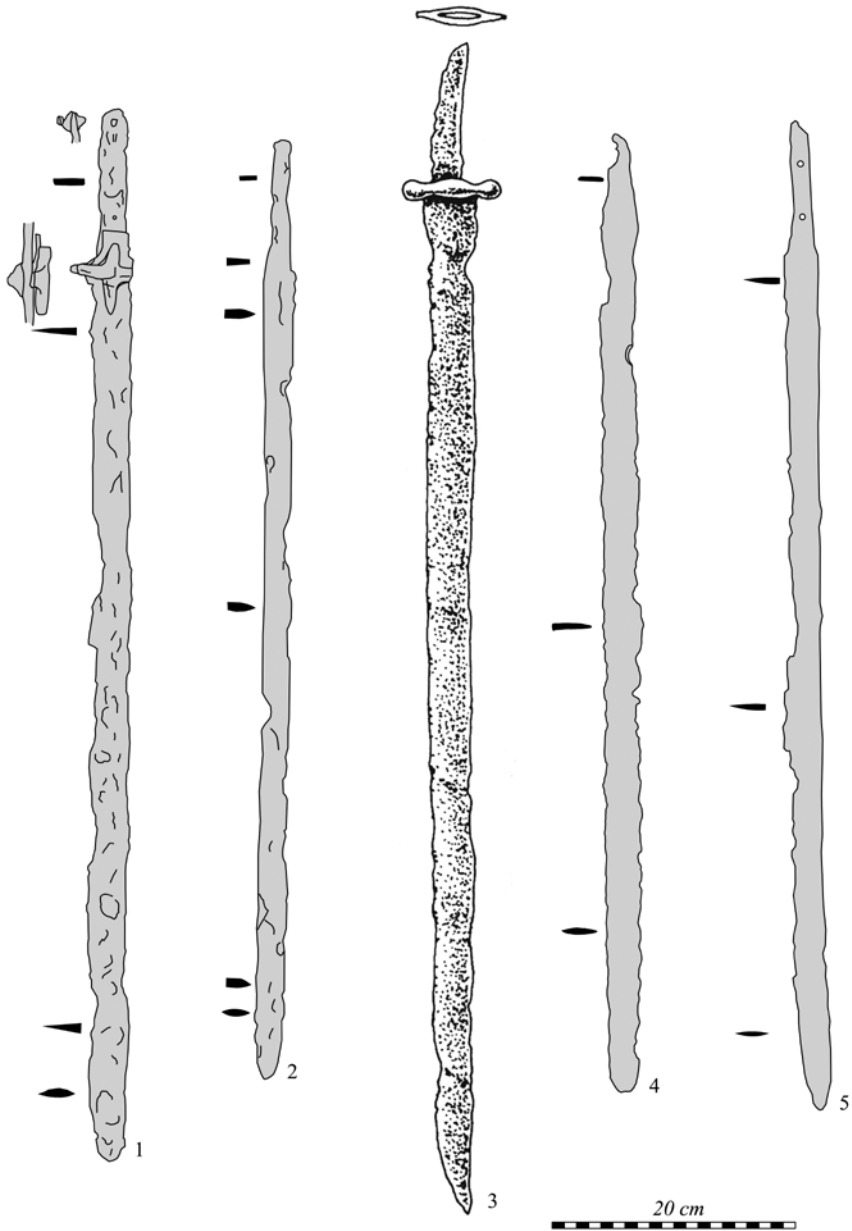


FIGURE 74 *Single-edged swords with false edge (E.II.C):* 1. Komárno–8 Shipyard, grave No. 30 (Trugly 1987, 256., Abb. 3.; Taf. v/6.); 2. Košice–Šebastovce, grave No. 161 (Budinský-Krička – Točík 1991, 38; Taf. xxii/16.); 3. Tarnaméra, Urak dűlő, grave No. x (Szabó 1965, 42., VIII. t. 1–3; Simon 1991, 307, n. kép 2.); 4. Törökbálint, site No. 36/25, grave No. 2 (Kovrig 1957, 120., XIX. t. 27–29; MRT 7. 347–348; Simon 1991, 310.); 5. Želovce, grave No. 78 (Čilinská 1973, 49, Taf. XIV/20–21.).

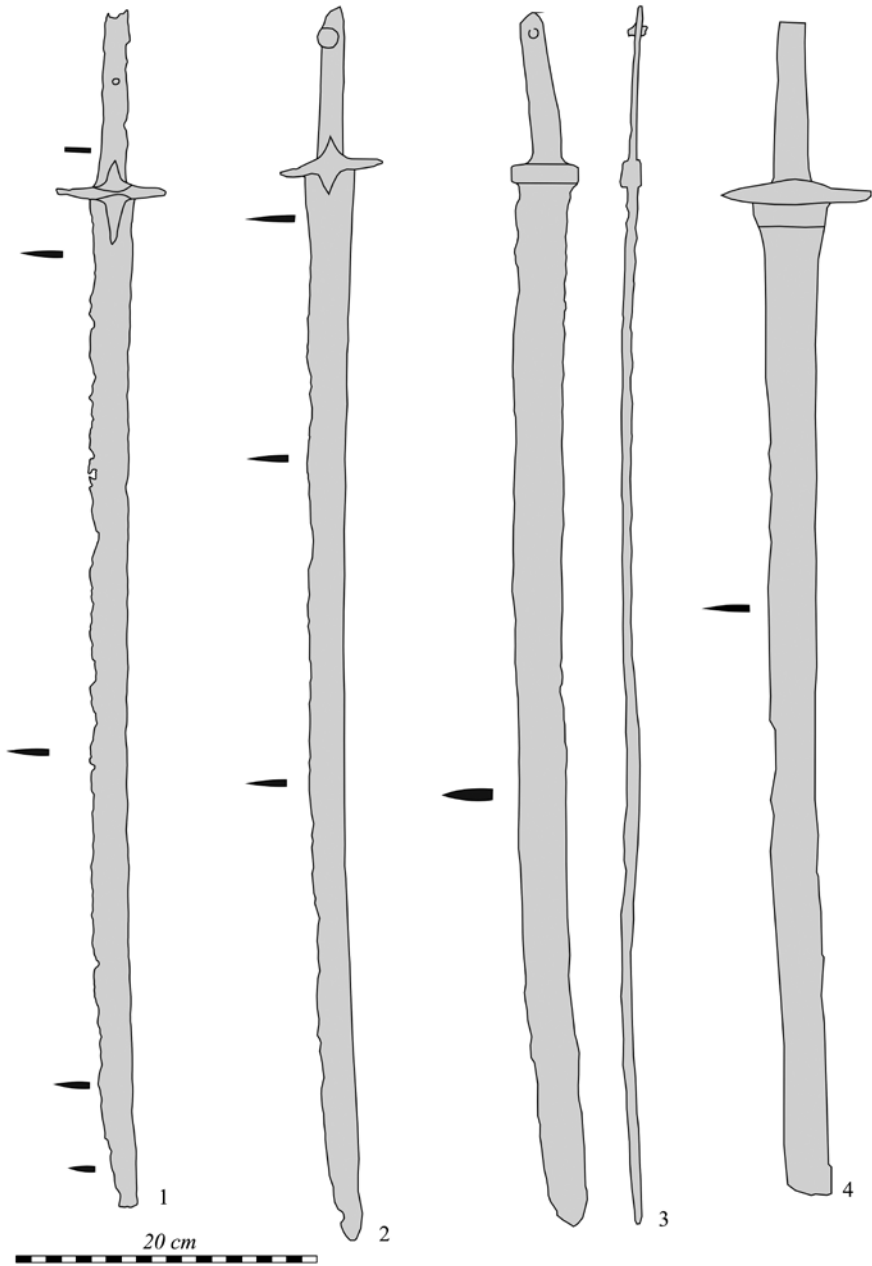


FIGURE 75 Slightly curved sabres (E.III.A): 1. Bányog–Gyűrhegy, grave No. 8 (Lovas 1929b, 255257, Fettich 1943, 7.); 2. Brodski Drenovac–Plana, grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV/156.); 3. Cicău, grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271, Fig 4/1.); 4. Holiare, grave No. 375 (Točík 1968a, 66, Taf. LXIII/15.).

Simon who first described its transitional character as a proto-sabre,<sup>117</sup> whilst its significance to the broader history of the Steppes was recognised by Csanád Bálint.<sup>118</sup>

The edged weapons of this type are evenly distributed and can be found throughout the Carpathian Basin. The appearance of the false edge during the Early phase is of considerable significance, since it emphasises the continuity between the Early and Middle Avar periods. These weapons cannot be treated as mere predecessors of sabres, since this type was contemporary with edged weapons of curved blade, and therefore weapons of type E.II.C should be considered a transitional type towards sabres, and their use ended as a typological dead end in the history of Avar-age edged weapons.

### 1.3 *Sabres (E.III)*

#### 1.3.1 History of Classification

Sabres were studied in detail from the beginnings of archaeological research both in Hungary and Eastern Europe. In what follows, only the history of research of classification of the sabres from the Carpathian Basin will be discussed, while the Russian history of research as well as the research on the origins of sabres will be presented in chapter VI.1.

József Hampel was the first who described these weapons in detail, in particular measuring the curvature of the blade.<sup>119</sup> However, some minor confusion resulted when he confused the sabre from the Ozora-Tótipusztá burial, which was dated to the second half of the 7th century, with that from the Szolyva grave which dates to the 10th century. Despite the chronological gap, he also suggested its similarity of the example from Ozora to the sabres from Kiskassa and Kecskemét.<sup>120</sup> He distinguished straight and curved 'sabres' though used the same name to describe them, since the Hungarian language of the 19th century did not distinguish single-edge swords from sabres.<sup>121</sup> He also

117 László Simon (1991, 270; Simon 1993a, 171–192) classified the formal attributes of the sabre (false edge and curved blade), which relate to his Vth group.

118 Bálint considered this problem in respect of the burial of Üch tepe from Azerbaijan, which contained a sword with a false edge, as well as identifying false edges on several other early Avar swords and interpreted them as sabres, treating the false edge as the main attribute of these sabres (Bálint 1992, 338–343; Bálint 1995a, 64–73).

119 It was measured as representing the distance along the back of the blade, formed by a straight line between the tip and stem of the blade.

120 According to his view this weapon was the first stage in the edged weapons of the 8th century. (Hampel 1897, 45–48).

121 Straight blade: Szolyva (= Ozora-Tótipusztá), Csanád (= Baracs) and Nagymányok. (Hampel 1905, 195–196).

compared the 9.5 cm long crossguard of the Csúny (Čunovo) sword to similar Byzantine crossguards of the 10th-11th century,<sup>122</sup> and suggested that the blade of these 'sabres' became straight beginning in the 6th through to the 9th-10th century.<sup>123</sup> Hampel clearly identified the basic differences between Avar and early Hungarian (10th century) sabres: the different type of crossguard and the curved hilt of the Hungarian sabres.<sup>124</sup>

Amongst early Hungarian researchers, Nándor Fettich identified sabres in Late Avar burials. He drew attention to their rhombic crossguard which was referred to as star-shaped. He distinguished these sabres from the 'Avar' sabres with long, straight crossguard and slightly curved blade.<sup>125</sup>

László Simon observed the false edge (one of the attributes of sabres) on several Early Avar edged weapons,<sup>126</sup> and identified a group with sabre-like attributes: those with false edge or curved blade,<sup>127</sup> while Csanád Bálint observed a false edge on the straight bladed edged weapon of Üch Tepe which he dated to the 6th century. He regarded the false edge as the main attribute of these sabres, and presumed the general appearance of 'proto-sabres' already during the Early phase.<sup>128</sup> A considerable role was played by the Gyenesdiás burial in the research of Middle Avar sabres, since this find made possible the reconstruction by Róbert Müller of the hilt, scabbard and suspension loops of a Middle Avar sabre.<sup>129</sup>

The edged weapons of the Middle and Late phase were studied by Éva Garam in detail with the publication of the burials at Tiszakécske-Óbög. The main attribute used was the crossguard, according to Garam the star-shaped (rhombic) crossguards were influenced by the cast bronze Byzantine crossguards. She distinguished star-shaped crossguards covered with gold or silver foil, rough star-shaped crossguards, and elongated star-shaped crossguards.

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122 The single-edged sword from grave No. 54 from Čunovo is dated to the 8th century, and not to the Late Roman period as Hampel suggested, though he was correct in suggesting it compared with the sabre of Ozora-Tótipusztá. (Hampel 1905, 197).

123 This typological argument is still valid, since the number and rate of curved blades are higher in the Middle Avar period than in the Late phase, when mainly single-edged swords were used.

124 Hampel 1905, 197.

125 Nándor Fettich (1927, 167–171) studied the sabres of grave No. 27 and 31 of Mosonszentjános.

126 Simon 1983, 38–42; Simon 1991, 270; Simon 1993a, 171–192; Bálint 1995a, 65–67.

127 Simon 1991, 270; Simon 1993a, 171–192.

128 Bálint 1992, 338–342; Bálint 1995a, 65–67.

129 His research clarified the original function of some mounts which decorated the hilt or the suspension loop of the sabres like the quadrangular mounts of the 111rd find of Igar (Müller 1989, 143–147).

Besides sabres and single-edged swords with star-shaped crossguards, she also described a 'late Saltovo type crossguard' and sabres with P-shaped suspension loops. According to her study sabres were used from the last third of the 7th century until the beginning of the 9th century.<sup>130</sup>

On the basis of this short overview of the history of the study of the sabre, it is obvious that most studies focused either on the crossguard or the false edge, with very little attention given to the blade itself. Moreover, discussion of chronology and the origin of the sabres are based mainly on historical hypotheses concerning migration.

### 1.3.2 The Definition and Aspects of Classification of the Sabre

Sabres are edged weapons with curved blade and false edge. In past research, different terminology has been used for distinguishing the sabre from single-edged swords. Various researchers have used different attributes in respect of this distinction and in several instances sabres and single-edged swords were not distinguished at all, despite different national research traditions, such as Russian, German or English, having terms for differentiating the two forms.<sup>131</sup>

Whilst the curved blade of these sabres were already observed in earlier research, the measuring of this curve as an attribute for classification was not undertaken until much later. Svetlana Aleksandrovna Pletneva was the first to classify sabre blades based on their curvature, describing it as the segment height of a circle composed by a line between the tip and stem of the back of the blade, observing an increase in this curvature from the 8th to the 13th century.<sup>132</sup> Umar Jusufovich Kochkarov combined different attributes in his study of Caucasian sabres, examining instead the correspondence between this curvature and length of the blade,<sup>133</sup> both of which increased over time.<sup>134</sup>

Unfortunately very few followed the example of these two authors, and consequently there is no full classification for the sabre. My intention is to contribute to the definition and classification of sabres in some detail. Curved blades are considered to be those where the midline of the blade cannot be described as straight, and where the curve of the edge and the back of the blade can

130 Garam 1991a, 142–160.

131 The Russian and Slavonic languages in general distinguish the sabres (сабля) of curved blade and the single-edged swords of straight blade (палаш).

132 Pletneva distinguished five types based on the curvature of the sabre blades (Pletneva 1973, 17–19).

133 Kochkarov (2008, 25–27) distinguished 8 blade types based on the correlation of curvature and blade length.

134 Kochkarov 2008, 39.

be described as a segment of a circle created by a line between their ends. Therefore, every sabre blade can be described by two segments, an outer one, following the edge, and an inner one, following the back of the blade, the inner segment being necessarily smaller than the outer (fig. 2).

The measurement of this curvature cannot be defined only by the height of this segment,<sup>135</sup> since the same height can belong to blades of different length which can affect the length of the segment itself. The curvature should therefore be described as a quotient of the height of the inner segment and the length of the segment line, the latter showing what percentage of a circle is defined by this curve. However, a deficiency of this approach is that in most cases the curvature of the blade is not symmetrical or regular along its length, so that in some cases the upper third of the blade is straight and only its end is curved. However, its advantage is that it can be measured quickly and it constitutes data for comparison.

The curved edge of the sabre is especially suitable for cutting, since its cutting mechanism differs from that of single-edged swords.<sup>136</sup> For example, the straight blade will first push across the surface to cut, while the curved blade slips on the surface and slits into the flesh (similarly to that of a scalpel), the ideal angle for cutting being 45°.

The false edge (or 'elman') is the double-edge of the lower third of a single-edged blade. The function of this false edge is largely agreed upon in the literature, being for cutting, as was first supposed by Gyula László.<sup>137</sup> However, new theories have since developed with the study of Gábor Szóllósy who observed that the existence of the false edge facilitates the thrusting function, since a lenticular cross section has several advantages over that of a triangular cross section.<sup>138</sup> However, the length of the false edge was not examined, and in most cases no observations were made on its length during the description of the sabre blades. Most false edges, however, are extremely short and not suitable for cutting, and in most cases the false edge was probably used for thrusting.

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135 For similar methods, see: Hampel 1905; Kalmár (manuscript), Pletneva 1973, 17–19; Kyzlasov 2008, 75; Kochkarov 2008, 25–26.

136 The cutting mechanism of the curved blade was demonstrated by the figure of Zakharov – Arendt 1935, 58. Abb. 23.

137 Gyula László (1944, 352) elaborated his theory of the false edge after the study by István Kovács (1941, 130). Both of them supposed, that the main purpose of the false edge was hurting the horse of the enemy, while the cutting function of the false edge was suggested by Csaba Hidán to be in the attack against the forearm and hands (cited by Szóllósy 2001, 278).

138 Szóllósy 2001, 279.



The cross section of the blade is an important attribute, although it is rarely uniform and differs according to the various types of weapon blade. A triangular cross section is usual on the seaxes and single-edged swords, and a pentagonal cross section was used for sabre blades.

Sabres are thus edged weapons with curved, single-edged blade, false edge and of pentagonal or triangular cross section. The hilt and the crossguard are only secondary attributes, and have been classified separately.

### 1.3.3 Types of Sabre Blades

Sabre blades can be classified using attributes like its form, measurements, curvature, length of false edge and the form of hilt. The study of the blade form is particularly limited by corrosion and various methods of conservation preserving wooden scabbard corroded onto the blade. Despite this, based on its form two groups can be distinguished: a narrowing blade and a blade with parallel sides, while in some cases the sabre blade can widen at the false edge.

The correspondence between the length and curvature as a typological development was suggested by Pletneva<sup>139</sup> and Kochkarov,<sup>140</sup> although the cited examples suggest a slow, gradual development, whereas the history of sabres during the Avar Age is of much shorter period. The blade width could also be an important attribute for further classification: the sabres known from the Saltovo cemeteries have a relatively wide blade (average 3.5 cm), while the Avar sabre blades are usually narrower.

In what follows, sabre blades will be classified based on their curvature using the quotient of the height of the segment and the length of the straight line of the segment, as described above, their limits determined by an even distribution: 1.5% is the border between slightly curved and curved blades, 2.5% is curved and strongly curved blades. The curvature of the blade could be determined in 58 cases, its average being 1.85%.

Altogether 136 sabres with curved blades are known from the Avar Age, most of them being dated to the Middle (79 examples) and Late phases (50 examples). Only six examples are dated to the Early phase (maps 33–35). In 45 cases the curvature of the blade could not be measured, thus these blades were not further classified. The measurements of the main attributes of these sabre blades, as well as the curvature, are presented in the table below.

139 Pletneva 1973, 17–19.

140 According to the observations of Umar I. Kochkarov (2008, 25–27) the sabres of the Early phase (8th century) are shorter and less curved than the later sabres (11th–12th centuries).

Site	Grave No.	Length (mm)	Hilt-length (mm)	Blade length (mm)	Blade width (mm)	Segment- height (mm)	Curvature
Bágyog–Gyűrhegy	8	835	145	690	30	5	0.019373
Berettyóújfalu– Nagy Bócs-dűlő		885	155	72	40	25	0.034722
Biatorbágy– Hosszúrétek	35	617	45	520	36	10	0.023077
Bratislava– Devinska Nová Ves	842	846	120	826	35	13	0.018056
Brodski	14	820	102	710	33	9	0.013234
Drenovac–Plana							
Brodski	19	724	35	677	28	5	0.007386
Drenovac–Plana							
Budapest xx. Soroksár		854	95	759	27	5	0.006748
Esztergom– Náphegy		745	113	632	24	9.5	0.015032
Gyenesdiás– Algyenes	64	1050	210	770	24	24	0.031169
Holiare	375	820	113	693	35	9	0.012987
Igar–Vámi szőlőhegy	III	982	133	830	33	33	0.039759
Ivánca– Szabadság utca		820	100	663	28	16	0.022535
Jászapáti– Nagyállás út	265	850	100	740	32	5	0.006757
Kecskemét– Ballószög– Karácsonyi szőlő	1	870	95	761	27	10	0.013158
Kecskemét– Mikóstelep		850	90	750	32	17	0.021333
Kecskemét–Nyiri erdő		885	122	745	35	15	0.020134
Kehidakustyán– Kehida, Központi Tsz-major	67	800	100	700	25	3	0.004286

(cont.)

Site	Grave No.	Length (mm)	Hilt-length (mm)	Blade length (mm)	Blade width (mm)	Segment- height (mm)	Curvature
Kehidakustyán– Kehida, Központi Tsz-major	106	755	105	620	26	18	0.029032
Kiskassa– Téglaház	stray	960	117	818	37	20	0.022947
Kisköre–Halastó	24	870	80	790	30	20	0.025316
Kiskunmajsa– Pálos		450	42	408	26	6	0.013333
Komárno–8 Shipyard	107	870	60	710	35	8	0.011268
Komárno–8 Shipyard	142	970	118	835	28	25	0.02994
Košice–Barca, Gazdinská škola	4	670	75	590	30	22	0.032836
Košice– Šebastovce	230	905	120	785	24	10	0.012739
Košice– Šebastovce	254	800	100	690	32	10	0.014493
Kölked– Feketekapu B	210	845	145	700	36	5	0.007143
Mosonszentjános	27	794	15	762	35	5	0.006562
Öskü–Agyaggödör	2	935	100	820	33	22	0.02706
Pókaszetk	16	714	70	645	25	6	0.009302
Pókaszetk	415	788	85	689	26	12	0.017417
Szeged–Átokháza		870	54	826	37	14	0.016949
Székkutas– Kápolna-dűlő	541	955	130	820	40	6	0.007317
Szekszárd– Palánki dűlő	69	862	130	744	25	8	0.0107527
Szentes–Kaján	33	900	100	780	35	13	0.016667
Tápiószele– Somogyi B. út 21.		780	110	668	36	15	0.022455
Tiszakécske– Óbög		770	94	676	28	15	0.022189

Site	Grave No.	Length (mm)	Hilt-length (mm)	Blade length (mm)	Blade width (mm)	Segment- height (mm)	Curvature
Tizsakécske- Óbög		940	80	860	35	12	0.015
Tizsakécske- Óbög		870	120	750	30	15	0.02
Tizsakürt- Homokdomb		870	120	750	30	19	0.025568
Valalíky- Všechsvätých	24	835	110	710	28	13	0.01831
Wien 13. Unter St. Veit		870	125	745	32	11	0.014865
Wien 23. Liesing	4	920	157	746	32	15	0.020107
Záhorská Bystrica	49	820	95	725	26	10	0.0137931
Želovce	1	860	143	703	25	10	0.0142248
Želovce	44	870	110	745	32	15	0.0201342
Želovce	79	790	110	670	23	5	0.0075188
Želovce	167	760	110	641	30	3	0.0046802
Želovce	170	850	93	744	35	10	0.0135135
Želovce	312	725	96	620	30	13	0.0263158
Želovce	335	995	147	833	32	6	0.0180072
Želovce	371	940	102	828	30	12	0.0157005
Želovce	442	935	132	792	30	18	0.0176768
Želovce	490	850	125	717	30	17	0.0234483
Želovce	564	980	116	844	35	10	0.0118483
Želovce	818	930	140	767	30	4	0.0338981
Želovce	820	930	150	760	30	37	0.0552632

Sabre blades are classified based on their curvature in to three types: E.III.A: slightly curved blades, the curvature of which is between 0 and 1.5%; E.III.B: curved blade, with a curvature of 1.5–2.5%; E.III.C: strongly curved blades, with a curvature of more than 2.5%.

Slightly curved sabre-blades are characterised by a segment-height between 5–10 mm, their curvature-quotient being between 0–1.5% (map 34, figs. 76–77). 40 blades belong to this type, and examples with crossguards being

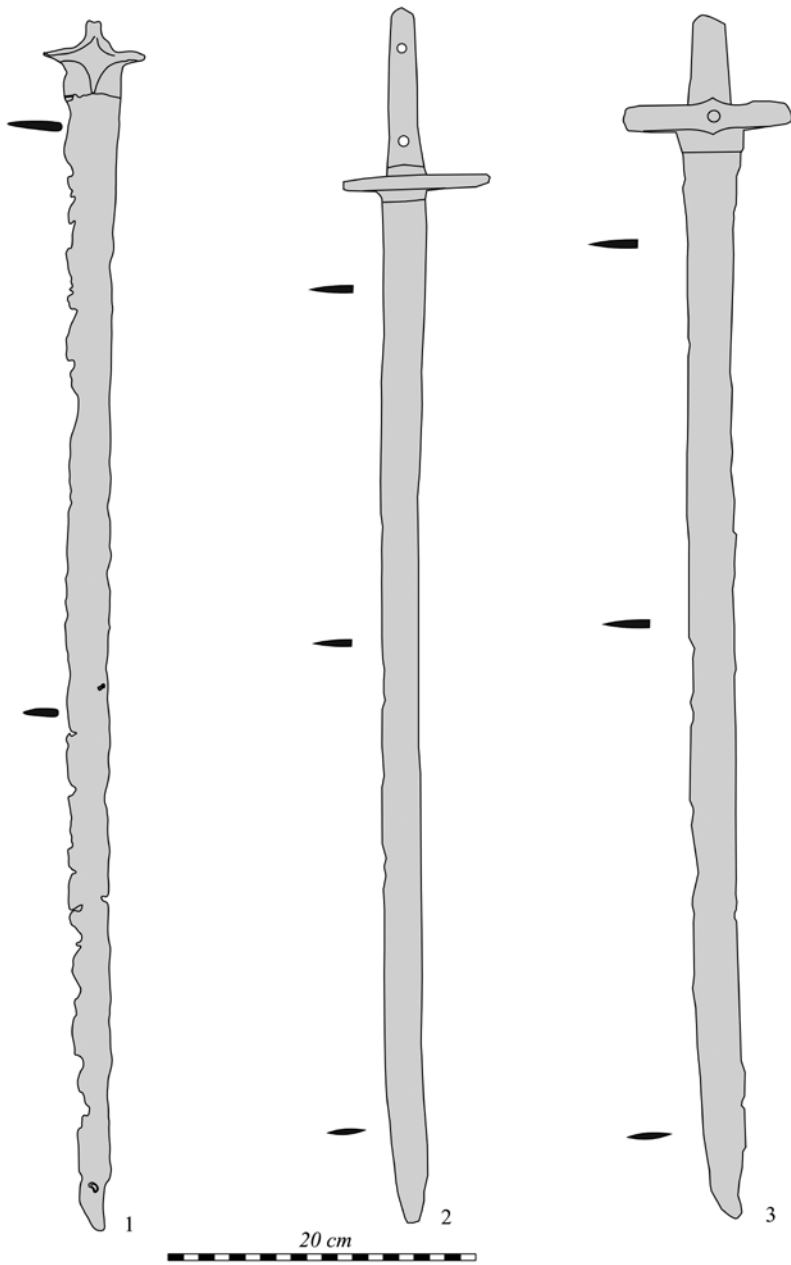


FIGURE 76 *Slightly curved sabres (E.III.A):* 1. Mosonszentjános–Kavicsbánya, grave No. 27 (Fettich 1927, 166–168, v/2.); 2. Želovce, grave No. 79 (Čilinská 1973, 49, Taf. xv/1.); 3. Želovce, grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1.).

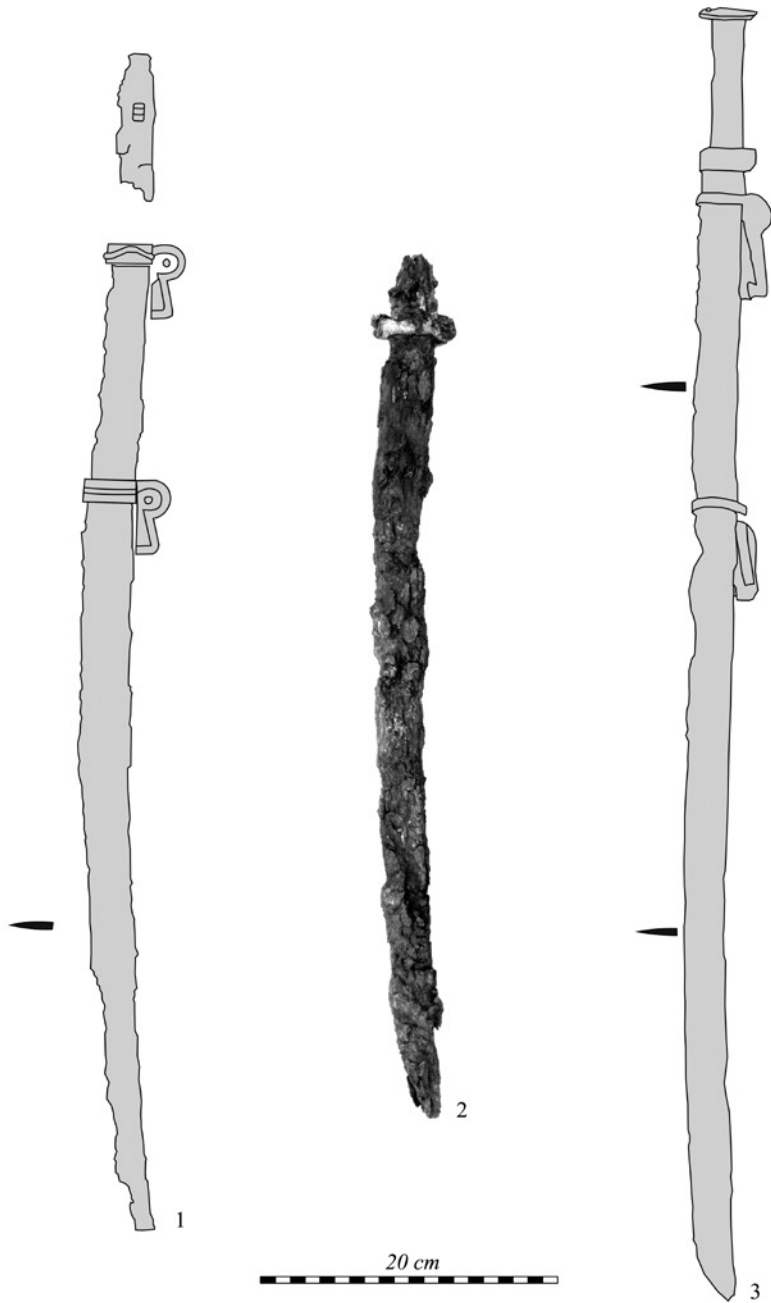


FIGURE 77 *Curved sabres (E.III.B)*: 1. *Ivánca–Szabadság utca 20.* (Bóna 1970, 243, 251. 8/5.); 2. *Biatorbágy–Hosszúrétek* (site: MO PM 016); grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 78. képek); 3. *Kecskemét–Ballószög–Karácsonyi szőlő, grave No. 1* (Szabó 1939, 185–187, Taf. 1, Abb. 1.).

more frequent (25 examples, 62.5%)<sup>141</sup> than sabre blades without crossguard (fifteen pieces).<sup>142</sup> The type is evenly distributed, with such blades found in Transdanubia,<sup>143</sup> Southwestern Slovakia,<sup>144</sup> the Great Hungarian Plain<sup>145</sup> and

- 141 Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Brodski Drenovac–Plana grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156. Tabl. XIV; Budapest xx. Soroksár, Homokbánya (Simon 1991, 288; Nagy 1998, I. 142. II. Taf. 98/1. Taf. 211/2); Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271, fig. 4/1); Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (Garam 1994–95, 134. 8. kép); Esztergom–(Naphegy) (Jankó 1930, 137. 3. j); Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15); Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1); Jászapáti–Nagyállás út grave No. 265 (Madaras 1994, 71–72, Taf. XXXIX/14); Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8); Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15); Mosonszentjános–Kavicsbánya grave No. 27 (Fettich 1927, 166–168. v/2); Szeged–Fehértó B grave No. 29 (Madaras 1995b, 140, Pl. 5/17); Székesfehérvár–Órhalom (Hampel 1900, 111–112); Tiszafüred–Majoros grave No. 379 (Garam 1995, 52, Taf. 86, Taf. 177/1); Vösendorf grave No. 715 (Sauer 2007, 94–95); Želovce grave No. 79 (Čilinská 1973, 49, Taf. xv/1); Želovce grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1); Zillingtal grave No. D-330 (Mehofer 2006, 162. Abb. C).
- 142 Debrecen–Haláp (Zoltai 1929, 40–42; Ecsedi 1930, 70–71; Sóregi 1939, 87–88, Abb. 52–53); Kiskunmajsa–Pálos (Csólyospálos) (ADAM, 200); Nyíregyháza–Rozsrétszőlő, Szelkő-dűlő II. grave No. 81 (Pintye 2006, 293); Pókaszpetk–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 137. Pl. 1); Rákóczi-falva–Kastélydomb grave 'B' (Selmeczi – Madaras 1979–1980, 146. VII. tábla 9); Székkutas–Kápolna-dűlő grave No. 541 (Nagy é.n. (2003) 71, 194. kép 1); Szekszárd–Bogyiszlói út grave No. 484 (Rosner 1999, 65, Taf. 33/12); Szekszárd–Palánki dűlő grave No. 69; Vasasszonyfa (Kiss G. 1985, 15. tábla 2).
- 143 Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Budapest xx. Soroksár, Homokbánya (Simon 1991, 288; Nagy 1998, I. 142. II. Taf. 98/1. Taf. 211/2); Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (I) (Garam 1994–95, 134. 8. kép); Esztergom–(Naphegy) (Jankó 1930, 137. 3. j); Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15); Mosonszentjános–Kavicsbánya grave No. 27 (Fettich 1927, 166–168. v/2); Pókaszpetk–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 137. Pl. 1); Székesfehérvár–Órhalom (Hampel 1900, 111–112); Szekszárd–Bogyiszlói út grave No. 484 (Rosner 1999, 65, Taf. 33/12); Szekszárd–Palánki dűlő grave No. 69; Vasasszonyfa (Kiss G. 1985, 15. tábla 2)—11 examples.
- 144 Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15); Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1); Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8); Želovce grave No. 79 (Čilinská 1973, 49, Taf. xv/1); Želovce grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1).
- 145 Debrecen–Haláp (Zoltai 1929, 40–42; Ecsedi 1930, 70–71; Sóregi 1939, 87–88, Abb. 52–53); Jászapáti–Nagyállás út grave No. 265 (Madaras 1994, 71–72, Taf. XXXIX/14); Kiskunmajsa–Pálos (Csólyospálos) (ADAM, 200); Nyíregyháza–Rozsrétszőlő, Szelkő-dűlő II. grave No. 81 (Pintye 2006, 293); Rákóczi-falva–Kastélydomb grave 'B' (Selmeczi – Madaras 1979–1980, 146. VII. tábla 9); Szeged–Fehértó B grave No. 29 (Csallány 1946–48, 352–353; Madaras

Transylvania (map 34).<sup>146</sup> Slightly curved sabres appeared already at the end of the Early phase,<sup>147</sup> but became popular during the Middle (24 examples)<sup>148</sup> and Late (12 examples) phases.<sup>149</sup> Slightly curved blades were mainly used during the Middle phase.

The curvature of blades of type E.III.B is more obvious, their segment height being between 11 and 20 mm, and their curvature-quotient between 1.5–2.5%. 40 examples belong to this type (map 35, figs. 78–80). Sabres with crossguard are more frequent (28 examples)<sup>150</sup> but some pieces without crossguard are

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- 1995b, 140, Pl. 5/17); Székkutas–Kápolna-dűlő grave No. 541 (Nagy é.n. (2003) 71, 194. kép 1); Tiszafüred–Majoros grave No. 379 (Garam 1995, 52, Taf. 86, Taf. 177/1)—8 examples.
- 146 Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271. fig. 4/1).
- 147 Szekszárd–Bogyiszlói út grave No. 484 (Rosner 1999, 65, Taf. 33/12).
- 148 Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (I) (Garam 1994–95, 134. 8. kép); Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1); Jászapáti–Nagyállás út grave No. 265 (Madaras 1994, 71–72, Taf. XXXIX/14); Kiskunmajsa–Pálos (Csólyospálos) (ADAM, 200); Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15); Nyíregyháza–Rozsrétszőlő, Szelkő-dűlő II. grave No. 81 (Pintye 2006, 293); Pókaszeptk–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 137. Pl. 1); Rákóczi falva–Kastélydomb grave 'B' (Selmecezi – Madaras 1979–1980, 146. VII. tábla 9); Szeged–Fehértó B grave No. 29 (Csallány 1946–48, 352–353; Madaras 1995b, 140, Pl. 5/17); Tiszafüred–Majoros grave No. 379 (Garam 1995, 52, Taf. 86, Taf. 177/1); Želovce grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1).
- 149 Brodski Drenovac–Plana grave No. 14 (Vinski–Gasparini – Ercegovici 1958, 144–145. 156. Tabl. xiv); Budapest xx. Soroksár, Homokbánya (Simon 1991, 288; Nagy 1998, I. 142. II. Taf. 98/1. Taf. 211/2); Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271. fig. 4/1); Debrecen–Haláp (Zoltai 1929, 40–42; Ecsedi 1930, 70–71; Sőregi 1939, 87–88, Abb. 52–53); Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15); Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8); Mosonszentjános–Kavicsbánya grave No. 27 (Fettich 1927, 166–168. v/2); Székkutas–Kápolna-dűlő grave No. 541 (Nagy é.n. (2003) 71, 194. kép 1); Vasasszonyfa (Kiss G. 1985, 15. tábla 2); Vösendorf grave No. 715 (Sauer 2007, 94–95); Želovce grave No. 79 (Čilinská 1973, 49, Taf. xv/1); Zillingtal grave No. D-330 (Mehofer 2006, 162. Abb. C).
- 150 Biatorbágy–Hosszúréték (MO PM 016 lh) grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. képek); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 842 (Eisner 1952, 181–182, Obr. 89/1); Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380. III. Taf. 277); Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47); Kiskassa–Téglaház, stray find (Hampel 1897, 144, CXLVII; Hampel 1905 III. Taf. 276); Košice–Šebastovce grave No. 221 (Budinský–Krička – Točík 1991, 46–47; Taf. xxviii/17); Košice–Šebastovce grave No. 230 (Budinský–Krička – Točík 1991, 49; Taf. xxxi/8); Košice–Šebastovce grave No. 254 (Budinský–Krička – Točík 1991, 55–56, Taf. xxxvi–xxxviii); Košice, AI unknown site; Pókaszeptk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. xxvii); Szeged–Átokháza (Csallány 1946–48, 350–352);



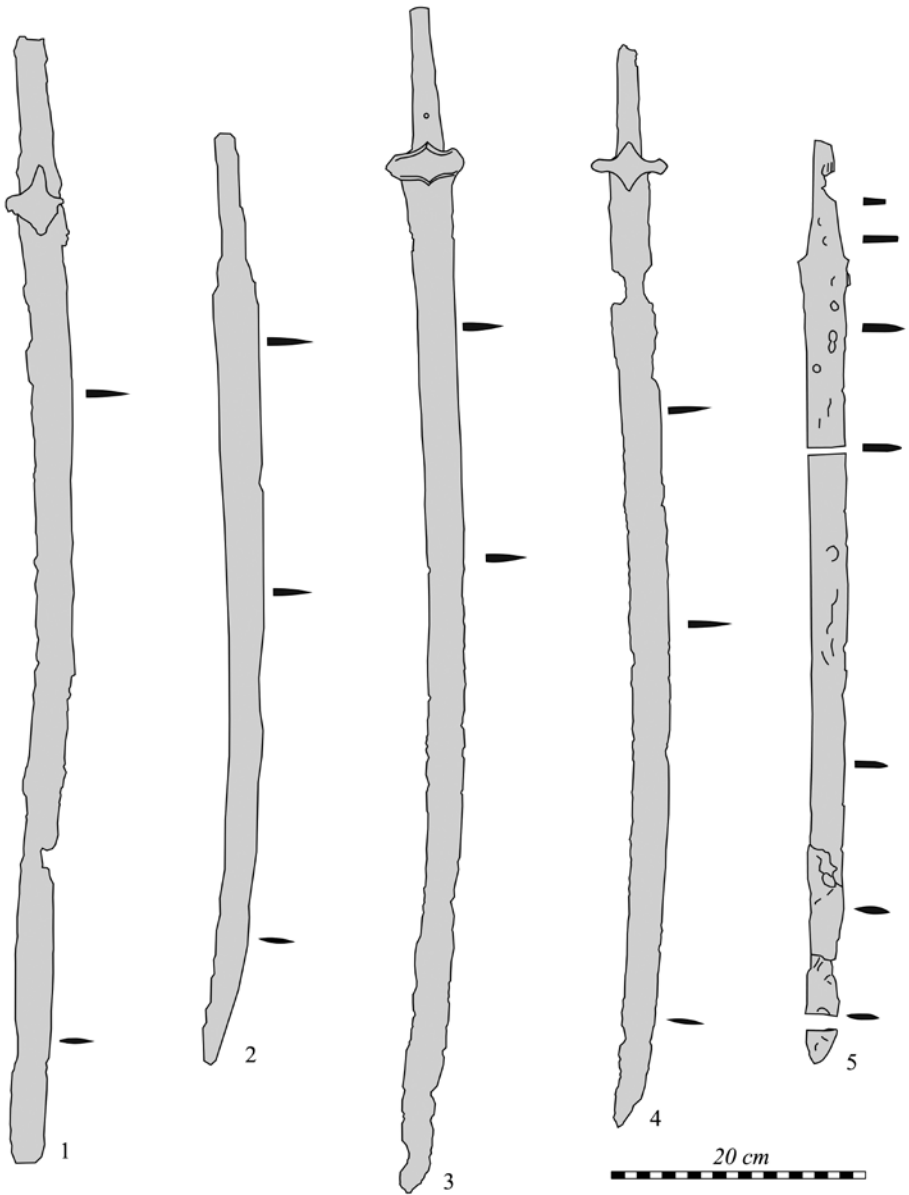


FIGURE 78 *Curved sabres (E.III.B)* 1. Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47.); 2. Kehidakustyán–Kehida, Központi Tsz-major, grave No. 106 (Szóke 2002, 77, 9/c.); 3. Kiskassa–Téglaház, stray find (Hampel 1897, 144.; CXLVII; Hampel 1905 III. Taf. 276.); 4. Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380, III. Taf. 277.); 5. Košice–Šebastovce, grave No. 221 (Budinský-Krička – Točík 1991, 46–47, Taf. XXVIII/17.).

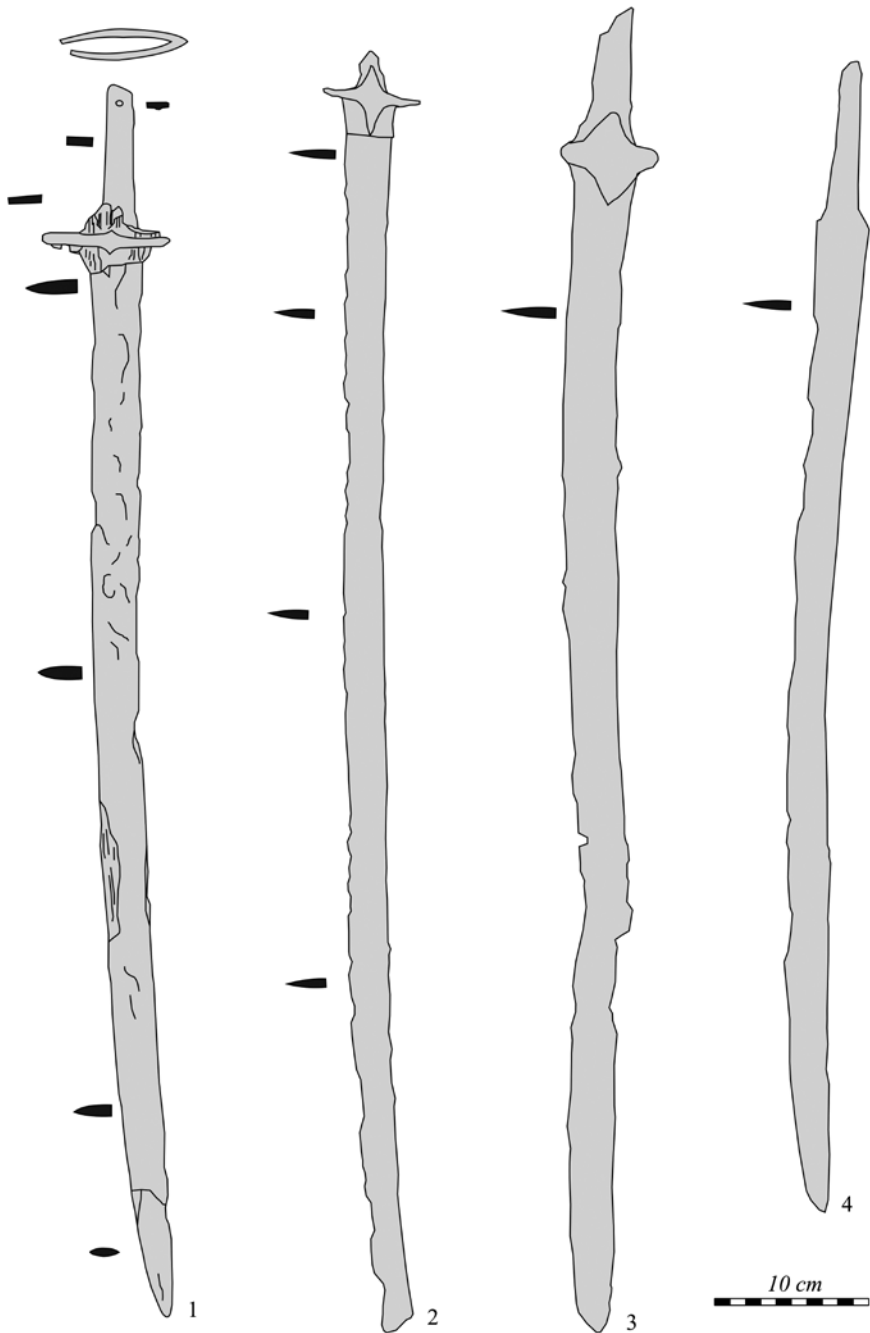


FIGURE 79 Curved sabres (E.III.B) 1. Košice–Šebastovce, grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. xxxvi–xxxviii.); 2. Szeged–Átokháza (Csallány 1946–48, 350–352.); 3. Szentes–Kaján, grave No. 33 (Korek 1943, 6, XLIV. t. 7.); 4. Tápiószele–Somogyi B. út 21. (Dínyés 1973, 45, x./16.).

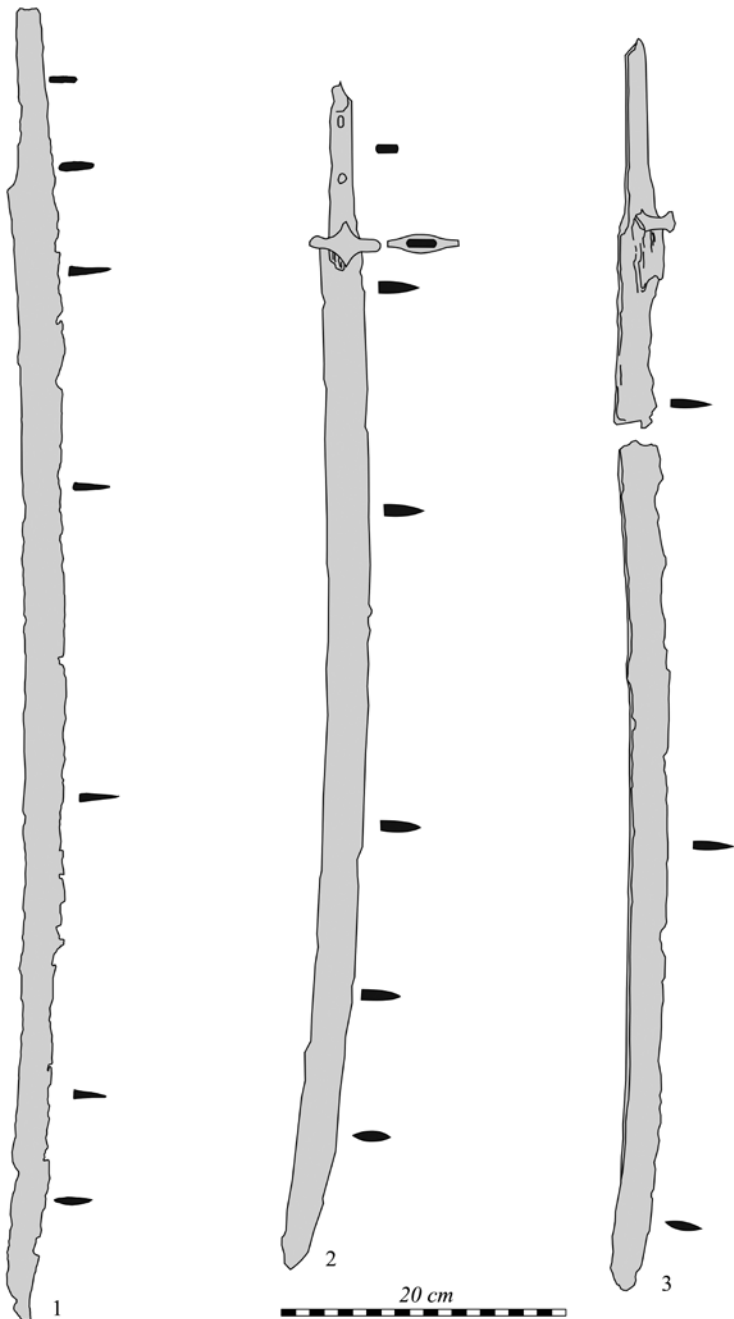


FIGURE 80 *Curved sabres (E.III.B)* 1. Tizsakécske–Óbög, grave No. 1 (Garam 1991a, 129, 131, 2 kép 7.; 3. kép 2.); 2. Valalíky–Všechvätých, grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153.); 3. Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63.; Taf. 7/2.).

also known (12 pieces).<sup>151</sup> The type is evenly distributed, being found in Transdanubia,<sup>152</sup> in the Danube – Tisza interfluvium,<sup>153</sup> on the northwestern periphery,<sup>154</sup>

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- Szentes–Kaján grave No. 33 (Korek 1943, 6. XLIV. t. 7); Tiszaeszlár–Sinkahegy, stray find (Csallány 1960a, 33. XVI. t. 4); Tiszakécske–Óbög grave No. 1 (Garam 1991a, 129, 131, 2. kép 7, 3. kép 2); Valálky–Všehčvých grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153); Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63, Taf. 7/2); Želovce grave No. 1 (Čilinská 1973, 34, Taf. 1/1); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21); Želovce grave No. 170 (Čilinská 1973, 66, Taf. xxx/12); Želovce grave No. 312 (Čilinská 1973, 91–92, Taf. LIII/11); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1); Želovce grave No. 371 (Čilinská 1973, 102–103, Taf. LXIII/16); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26); Želovce grave No. 490 (Čilinská 1973, 124, Taf. LXXXIII/17); Želovce grave No. 564 (Čilinská 1973, 135, Taf. XCI/12).
- 151 Ivánca–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. I. Abb. 1); Kehidakustyán–Kehida, Központi Tsz-major grave No. 106 (Szőke 2002, 77, 9/c); Tápiószele–Somogyi B. út 21. (Dinnyés 1973, 45. x/16); Tiszakécske–Óbög grave No. A (Garam 1991a, 134, 132, 3. kép 1); Tiszakécske–Óbög grave No. 3 (MNM 8/1931.4b); Tiszakécske–Óbög stray find (Garam 1991a, 134, 132, 3. kép 3); Tiszakürt–Homokdomb, Bundaszárító (Kovács 1893, 355–356); Wien–XXIII. Liesing grave No. 4 (Mossler 1948, 225–227); Záhorská Bystrica grave No. 49 (Kraskovská 1972, 18. Obr. 19/1).
- 152 Biatorbágy–Hosszúréték (MO PM 016 lh) grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. képek); Ivánca–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5); Kehidakustyán–Kehida, Központi Tsz-major grave No. 106 (Szőke 2002, 77, 9/c); Kiskassa–Téglaház, stray find (Hampel 1897, 144, CXLVII; Hampel 1905 III. Taf. 276); Pókaszepetk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. XXVII).
- 153 Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. I. Abb. 1); Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380. III. Taf. 277); Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47); Szeged–Átokháza (Csallány 1946–48, 350–352); Szentes–Kaján grave No. 33 (Korek 1943, 6. XLIV. t. 7); Tápiószele–Somogyi B. út 21. (Dinnyés 1973, 45. x/16); Tiszaeszlár–Sinkahegy, stray find (Csallány 1960a, 33. XVI. t. 4); Tiszakécske–Óbög grave No. 1 (Garam 1991a, 129, 131, 2. kép 7, 3. kép 2); Tiszakécske–Óbög grave No. A (Garam 1991a, 134, 132, 3. kép 1); Tiszakécske–Óbög grave No. 3 (MNM 8/1931.4b); Tiszakécske–Óbög stray find (Garam 1991a, 134, 132, 3. kép 3); Tiszakürt–Homokdomb, Bundaszárító (Kovács 1893, 355–356)—12 examples.
- 154 Bratislava–Devínska Nová Ves–A–Teheľňa grave No. 842 (Eisner 1952, 181–182, Obr. 89/1); Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63, Taf. 7/2); Wien–XXIII. Liesing grave No. 4 (Mossler 1948, 225–227); Záhorská Bystrica grave No. 49 (Kraskovská 1972, 18, Obr. 19/1)—four examples.

along the Ipoly river<sup>155</sup> and in the Košice Basin,<sup>156</sup> though none are known from the Transtisia region (map 35). Curved blades belonging to this type are mainly dated to the Middle phase (28 examples)<sup>157</sup> but were also still in use during the Late phase (twelve examples),<sup>158</sup> though such sabre blades were mainly popular during the first half of the 8th century.

- 155 Želovce grave No. 1 (Čilinská 1973, 34, Taf. 1/1); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21); Želovce grave No. 170 (Čilinská 1973, 66, Taf. xxx/12); Želovce grave No. 312 (Čilinská 1973, 91–92, Taf. LIII/11); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1); Želovce grave No. 371 (Čilinská 1973, 102–103, Taf. LXIII/16); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26); Želovce grave No. 490 (Čilinská 1973, 124, Taf. LXXXIII/17); Želovce grave No. 564 (Čilinská 1973, 135, Taf. XCI/12).
- 156 Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47, Taf. XXVIII/17); Košice–Šebastovce grave No. 230 (Budinský-Krička – Točík 1991, 49, Taf. XXXI/8)—Late—V. III. B/2.e; Košice–Šebastovce grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. XXXVI–XXXVIII); Košice, A1 unknown site; Valalíky–Všehvátých grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153).
- 157 Biatorbágy–Hosszúréték (MO PM 016 lh) grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. képek); Iváncsa–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. I. Abb. 1); Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380. III. Taf. 277); Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47); Kehidakustyán–Kehida, Központi Tsz-major grave No. 106 (Szóke 2002, 77, 9/c); Kiskassa–Téglaház, stray find (Hampel 1897, 144, CXLVII; Hampel 1905, III. Taf. 276); Pókaszepetk–Mesterföldék, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. XXVII); Szeged–Átokháza (Csallány 1946–48, 350–352); Tápíószele–Somogyi B. út 21. (Dinnyés 1973, 45. x./16); Tiszaeszlár–Sinkahegy, stray find (Csallány 1960a, 33. XVI. t. 4); Tiszakécske–Óbög grave No. 1 (Garam 1991a, 129, 131, 2. kép 7, 3. kép 2); Tiszakécske–Óbög grave No. A (Garam 1991a, 134, 132, 3. kép 1); Tiszakécske–Óbög grave No. 3 (MNM 8/1931.4b); Tiszakécske–Óbög stray find (Garam 1991a, 134, 132, 3. kép 3); Tiszakürt–Homokdomb, Bundaszárító (Kovács 1893, 355–356); Želovce grave No. 1 (Čilinská 1973, 34, Taf. 1/1); Želovce grave No. 170 (Čilinská 1973, 66, Taf. xxx/12); Želovce grave No. 312 (Čilinská 1973, 91–92, Taf. LIII/11); Želovce grave No. 371 (Čilinská 1973, 102–103, Taf. LXIII/16); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26); Želovce grave No. 490 (Čilinská 1973, 124, Taf. LXXXIII/17); Želovce grave No. 564 (Čilinská 1973, 135, Taf. XCI/12).
- 158 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 842 (Eisner 1952, 181–182, Obr. 89/1); Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. XXVIII/17); Košice–Šebastovce grave No. 230 (Budinský-Krička – Točík 1991, 49, Taf. XXXI/8); Košice–Šebastovce grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. XXXVI–XXXVIII); Szentés–Kaján grave No. 33 (Korek 1943, 6. XLIV. t. 7); Valalíky–Všehvátých grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153); Wien–XXIII. Liesing grave No. 4 (Mossler 1948, 225–227); Záhorská Bystrica grave No. 49 (Kraskovská 1972, 18, Obr. 19/1); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1).

Strongly curved blades (E.III.C) are less numerous, their curvature quotient is higher than 2.5% and their segment height is more than 21 mm. Only 11 sabre blades belong to this rare type (map 36, fig. 81). The most curved sabre blade of the Avar Age was found in grave No. 820 at Želovce (fig. 81/4),<sup>159</sup> the inner segment height of which is 42 mm, similar to the blade from 111rd find from Igar (at 33 mm, fig. 81/2),<sup>160</sup> as well as the sabre from Berettyóújfalu-Nagybócs-dűlő<sup>161</sup> and from grave No. 2 at Öskü-Agyaggödör.<sup>162</sup> Most of these sabre blades were equipped with crossguards (nine pieces),<sup>163</sup> though such blades without crossguard are also known.<sup>164</sup> The type is mainly found in the central area of the Carpathian Basin, and is a rare find in the northern periphery of this region,<sup>165</sup> while it is quite frequent in Transdanubia<sup>166</sup> and the Great Hungarian Plain (map 36).<sup>167</sup> Strongly curved blades are mostly characteristic

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- 159 Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1).
- 160 Igar-Vámszőlőhegy, Petőfi u. 56. grave No. 111 (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14).
- 161 Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16. Unpublished; I am indebted to Márta Szelekovszky for this information.
- 162 Rhé – Fettich 1931, 42–43.
- 163 Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16); Gyenesdiás–Algyenes, Bartók Béla and Hámán Kató utca grave No. 64 (Müller 1989, Abb. 2. 143–147, Abb. 3–5); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. 111 (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14); Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214. Taf. L/4); Košice–Barca grave No. 4 (Pástor 1954, 137, Tab. I./1); Öskü–Agyaggödör grave No. 2 (Rhé – Fettich 1931, 42–43); Želovce grave No. 818 (Čilinská 1973, 180, Taf. CXXX/12); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1); Zillingtal grave No. B-23 (Mehofer 2006, 162. Abb. B).
- 164 Kisköre–Halastó grave No. 24 (Garam 1979, Abb. 3. 13. Taf. 8, Taf. 29/2); Kunszállás–Fülöppjakab (Szentpéteri 1993, No. 397; Lezsák 2008, 44–45).
- 165 Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214. Taf. L/4); Košice–Barca grave No. 4 (Pástor 1954, 137, Tab. I./1); Želovce grave No. 818 (Čilinská 1973, 180, Taf. CXXX/12); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1); Zillingtal grave No. B-23 (Mehofer 2006, 162. Abb. B).
- 166 Gyenesdiás–Algyenes, Bartók Béla and Hámán Kató utca grave No. 64 (Müller 1989, Abb. 2. 143–147, Abb. 3–5); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. 111 (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14); Öskü–Agyaggödör grave No. 2 (Rhé – Fettich 1931, 42–43).
- 167 Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16); Kisköre–Halastó grave No. 24 (Garam 1979, Abb. 3. 13. Taf. 8, Taf. 29/2); Kunszállás–Fülöppjakab (Szentpéteri 1993, No. 397; Lezsák 2008, 44–45).

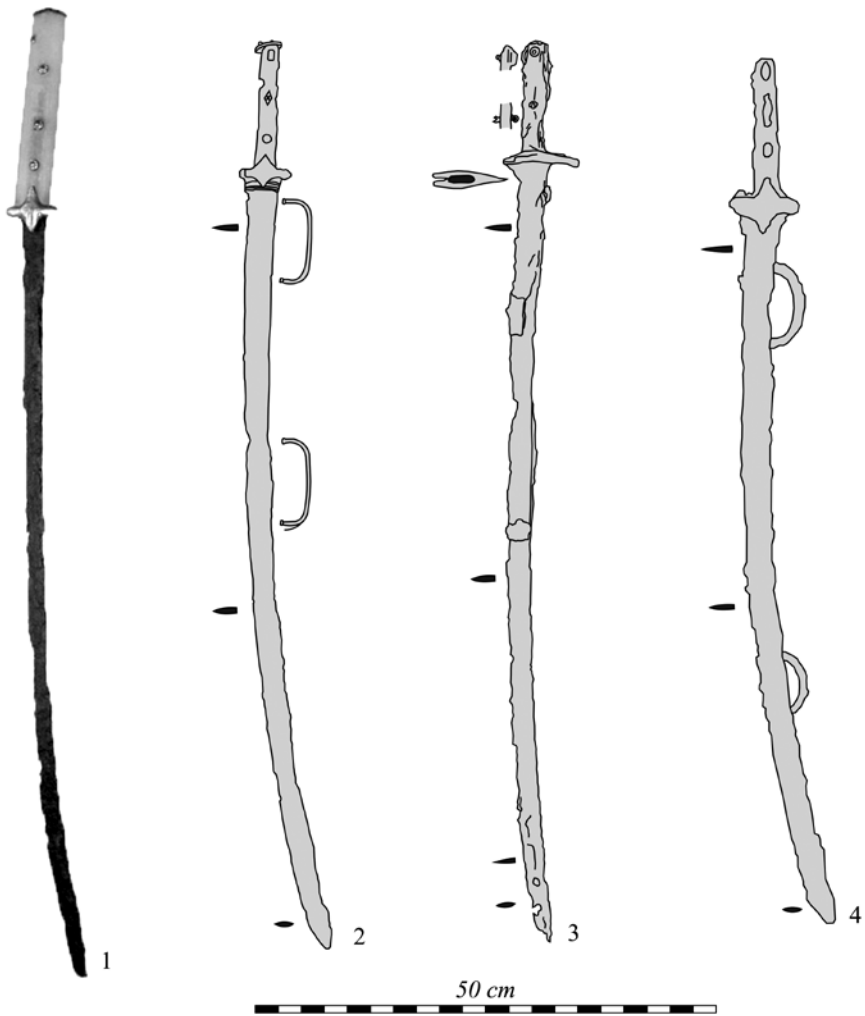


FIGURE 81 *Strongly curved sabres (E.III.C)* 1. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, *Abb.* 2., 143–147, *Abb.* 3–5.); 2. Igar–Vámszőlőhegy, Petőfi u. 56. complex No. ‘III’ (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, *Abb.* 14.); 3. Komárno–8 Shipyard, grave No. 142 (Trugly 1993, 213–214, *Taf.* 1./4.); 4. Želovce, grave No. 820 (Čilinská 1973, 180, *Taf.* cxxx1/1.).

of the Middle phase (eight examples)<sup>168</sup> but some are dated to the Late phase,<sup>169</sup> suggesting that curved blades became less common during the Late phase.

An implication of this classification of sabre blades according to their curvature is that it refutes the traditional typological explanation for their development, whereby they evolved from less curved blades to more strongly curved blades over time. Most of the strongly curved sabre blades are dated to the Middle phase (second half of the 7th century), while the 8th century is mainly characterised by sabres with slightly curved blades and straight single-edged swords. This suggests that there is no unilinear development of curved blades, rather that the strongly curved blades of the second half of the 7th century were likely an experiment, after which most of the blades became less curved, which were probably more suited to Late Avar tastes in weapons.

#### 1.3.4 The Length of False Edge and its Function

Unfortunately the length of the false edge is mostly unknown due to the uneven preservation of the blade. Although the existence of the false edge is generally accepted as a major attribute of sabres, there are some curved sabre blades of Avar Age without a false edge: all of these finds are of good preservation and therefore its absence cannot be attributed to corrosion, as in the cases of these from grave No. 8 at Bányog–Gyúrhegy,<sup>170</sup> grave No. 49 at Záhorská Bystrica<sup>171</sup> and Szeged–Átokháza.<sup>172</sup> These three weapons raise the methodological question as to the use of the false edge and the curvature of the blade as amongst the primary attribute for classifying the sabre. As a consequence, it should be noted that although the false edge is usually a part of the sabre, it does not necessarily appear on every single weapon with a curved blade.

168 Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16); Gyenesdiás–Algyenes, Bartók Béla and Hámán Kató utca grave No. 64 (Müller 1989, Abb. 2. 143–147, Abb. 3–5); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14); Kisköre–Halastó grave No. 24 (Garam 1979, Abb. 3. 13. Taf. 8, Taf. 29/2); Kunszállás–Fülöpjakab (Szentpéteri 1993, No. 397; Lezsák 2008, 44–45); Öskü–Agyaggödör grave No. 2 (Rhé – Fettich 1931, 42–43); Želovce grave No. 818 (Čilinská 1973, 180, Taf. CXXX/12); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1).

169 Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214. Taf. L/4); Košice–Barca grave No. 4 (Pástor 1954, 137; Tab. I./1); Zillingtal grave No. B-23 (Mehofer 2006, 162. Abb. B).

170 Lovas 1929b, 255–257; Fettich 1943, 7.

171 Kraskovská 1972, 18, Obr. 19/1.

172 Csallány 1946–48, 350–352.



Most of the measured false edges are relatively short, though a number are long enough for them to have functioned as a cutting edge. The length of the false edge is shown in the following table, arranged in decreasing order.

Site, grave No.	Length of false edge (mm)	Reference
Székkutas–Kápolnadűlő grave No. 541	260	Nagy é.n. (2003) 71, 194. kép 1.
Tápiószele–Somogyi B. u. 21.	225	Dinnyés 1973, 45, x./16.
Želovce grave No. 564	205	Čilinská 1973, 135, Taf. xCI/12.
Tizsakécske–Óbög	200	Garam 1991a, 134, 132, 3. kép 1.
Košice unknown	160	AÚ SAV Košice
Želovce grave No. 170	158	Čilinská 1973, 66, Taf. xxx/12.
Valalíky–Všechvátých grave No. 24	155	Pástor 1961, 378–379, 362, Obr. 153.
Holiare grave No. 11	153	Kovrig 1948, 120–121.
Üllő grave No. 1	150	MNM 5/1938.5
Želovce grave No. 843	146	Čilinská 1973, 183, Taf. cxxxIII/17.
Tizsakécske–Óbög grave No. 1	140	Garam 1991a, 129, 131, 2. kép 7, 3. kép.
Öskü–Agyaggödör grave No. 2	130	Rhé – Fettich 1931, 42–43.
Devínska Nová Ves grave No. 842	120	Eisner 1952, 181–182, Obr. 89/1.
Pókaszeptek grave No. 415	120	Sós – Salamon 1995, 182–183, Pl. xxvii.
Valalíky–Všechsvátých grave No. 85/83	115	AÚ SAV Košice
Košice–Šebastovce grave No. 254	110	Budinský-Krička – Točík 1991, 55–56, Taf. xxxvi–xxxviii.
Košice–Šebastovce grave No. 221	110	Budinský-Krička – Točík 1991, 46–47; Taf. xxviii/17.
Želovce grave No. 371	110	Čilinská 1973, 102–103, Taf. lxiii/16.
Mosonszentjános grave No. 27	110	Fettich 1927, 166–168., v/2.
Tarnaméra grave No. 'x'	105	Szabó 1965, 42, VIII. t. 1–3.
Želovce grave No. 78	100	Čilinská 1973, 49, Taf. xiv/20–21.

Site, grave No.	Length of false edge (mm)	Reference
Želovce grave No. 79	100	Čilinská 1973, 49, Taf. xv/1.
Kiskassa–Téglaház	100	Hampel 1897, 144, CXLVII; Hampel 1905 III. Taf. 276.
Komárno–Shipyards grave No. 71	100	Trugly 1987, 265, Taf. xv/15.
Košice–Šebastovce grave No. 161	90	Budinský-Krička – Točík 1991, 38, Taf. xxii/16.
Tiszaeszlár–Sinkahegy	90	Csallány 1960a, 33, xvi. t. 4.
Győr–Téglavető–dűlő grave No. 72	90	Börzsönyi 1902, 21; Fettich 1943, 16–17.
Želovce grave No. 818	88	Čilinská 1973, 180, Taf. cxxx/12.
Želovce grave No. 44	87	Čilinská 1973, 42, Taf. viii/21.
Komárno Shipyards grave No. 30	80	Trugly 1987, 256, Abb. 3, Taf. v/6.
Želovce grave No. 442	70	Čilinská 1973, 115, Taf. lxxiv/26.
Komárno Shipyards grave No. 142	70	Trugly 1993, 213–214, Taf. L/4.
Košice–Šebastovce grave No. 230	65	Budinský-Krička – Točík 1991, 49, Taf. xxxi/8.
Komárno Shipyards grave No. 72	64	Trugly 1987, 265–266, Taf. xvi/17.
Želovce grave No. 820	55	Čilinská 1973, 180, Taf. cxxx/1.
Kölked–Feketekapu B grave No. 210	55	Kiss 2001, 94–95, Taf. 64/15.
Gyenesdiás grave No. 64	40	Müller 1989, 143–17, Abb. 2–5.
Želovce grave No. 312	40	Čilinská 1973, 91–92, Taf. liii/11.
Záhorská Bystrica grave No. 49	0	Kraskovská 1972, 18, Obr. 19/1.
Želovce grave No. 335	0	Čilinská 1973, 97, Taf. lvii/1.
Szeged–Átokháza	0	Csallány 1946–48, 350–352.
Bágyog–Gyűrhegy grave No. 8	0	Lovas 1929b, 255–257; Fettich 1943, 7.

The lengths measured on the 42 listed examples reveals that most of the false edges were relatively short, whilst the longest was of 30 cm long, their average length being just 10.6 cm. This is much less than the average length of the false

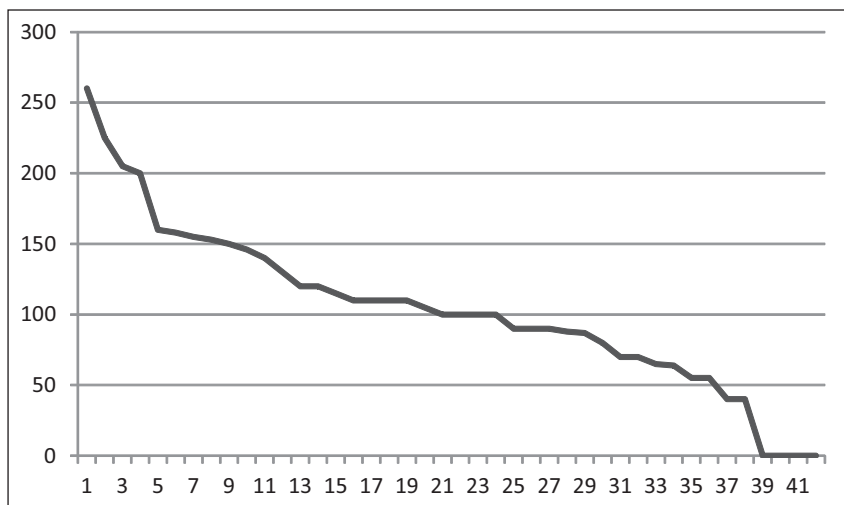


DIAGRAM 5 *Length of false edges.*

edge on early Hungarian or Late Nomadic sabres.<sup>173</sup> A false edge longer than 15 cm could be measured on only nine sabre blades,<sup>174</sup> below which its function as a cutting edge can be excluded. In most of the examined cases (68.3%) the length of the false edge was between 5 and 15 cm. This data verifies the suggestion by Gábor Szóllósy concerning the thrusting function of this attribute.<sup>175</sup>

### 1.3.5 Conclusions

In light of the above discussion of the various blade types and the grave goods accompanying them, it is clear that curved blades were mainly characteristic of the second half of the Middle phase (cca. 670–700), though such blades survived into the Late phase but in smaller numbers. The first half of the Late phase is characterised by slightly curved sabres, although their segment height is rarely larger than 1 cm. Straight single-edged blades, however, were more popular during this Late phase. The chronological distribution of sabre blades is shown in the diagram below.

173 False edges on sabres from the 10th–13th centuries in the Caucasus region can reach a length of 44 cm (Kochkarov 2008, 28.).

174 22% of the examined cases.

175 Szóllósy 2001, 278–279.

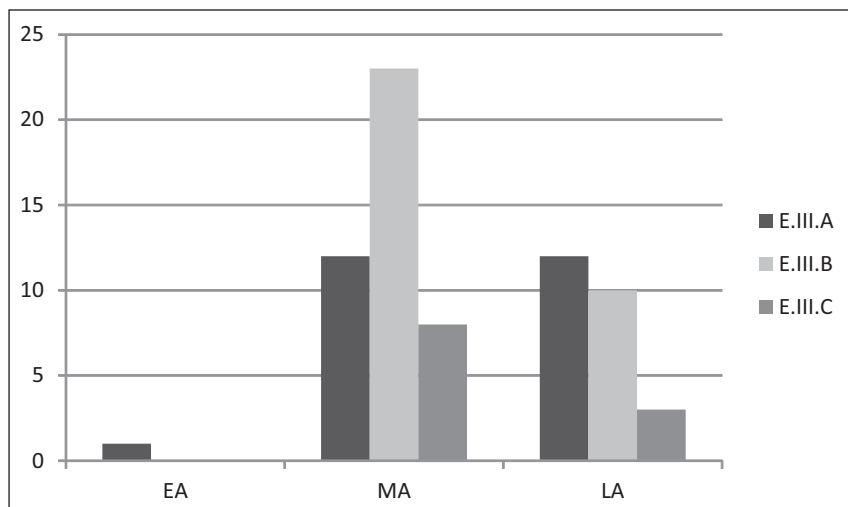


DIAGRAM 6 *Chronological distribution of sabre blades.*

#### 1.4 *Seaxes (E.IV)*

The study of seaxes is a neglected field of Avar weaponry, with very little research having been done on these weapons, largely as a consequence of them being treated as a peripheral phenomenon. Seaxes were most popular during the Middle and Late phases, although they were already known during the Early phase. Altogether 78 seaxes are known from 44 sites from the area of the Avar Qaganate.

The objective of this chapter is to examine whether Western or Central European classifications of these weapons can be applied to the examples from the Carpathian Basin, and to what extent their occurrence in these different regions can be related to one another chronologically. These problems are of particular significance, not only for the study of Avar weaponry itself but also in respect of the chronological synchronisation of Avar, late Merovingian and early Carolingian archaeology.<sup>176</sup>

The exact role and function of these weapons during the Avar Age has gone largely unaddressed. The exact processes behind its transmission (import, booty or copies) is also not clear. Some have suggested an eastern steppe origin of these weapons, whilst some even suppose that these weapons were the

176 See: Stein 1968; Zábajník 1978; Daim 1987; Stadler 2005. These issues will be discussed in chapter VI.3.

predecessors of sabres.<sup>177</sup> In addressing these problems, the study of weapon combinations and the nature of their deposition is of significance, as well as our primary concern with respect to how far these edged weapons were suitable for cavalry warfare.

A significant number of seaxes from Avar cemeteries remain unpublished or are only partly published, whilst several publications offer only incomplete or scant information. Several examples are fragmentary, and therefore their full metric data are not available. The following table shows the available information on these weapons.

Site	No.	Publication	Excavation report	Anthr. data	Grave goods	Preservation	Place in grave	Metallogr.
Alattyán–Tulát	1	X		X	X	Lost	X	
Bernolákovo–Sakoň	1	X			X	Good	X	
Bratislava–Čuňovo	1	X			X		X	
Devínska Nová Ves	4	X			X	Good		
Brunn a.d. Schneebergbau– Hochquellen- wasserleitung	1	partially				Lost		
Budapest XIV. Zugló, Népstadion	1	X		X	X	Good		
Čataj I.—Zemanské- Gejzove	2		X			Good		
Csolnok–Szedres, Kenderföldek	1	Partially			X	?	X	
Dormánd– Hanyipusza	1	Partially						
Grabelsdorf bei St. Kanzian am Klopeinersee)	1	X			X	Good	?	X
Győr–Téglavető-dűlő	1	X			X	Fragmentary		
Hédervár–Gyulamajor	1	X				Good		

177 András Alföldi (1932, 26), Joachim Werner (1956, 43) and István Bóna (1995) linked the appearance of seaxes to the Hunnic invasion, while Bodo Anke (1998, 93) drew attention to the fact that seaxes of the Hunnic period are usually too short to be the predecessors of the later long seaxes.

Site	No.	Publication	Excavation report	Anthr. data	Grave goods	Preservation	Place in grave	Metallogr.
Jászapáti–Nagyállás út	1	X			X		X	
Kehidakustyán– Kehida, Központi Tsz-major	1	X						
Kehida-Fővenyes	1	X					X	
Kisköre–Halastó	1	X			X	Good		
Komárno–6 Hadovce	1	X			X	Not conserved		
Komárno–8 Shipyard	1	X		X	X	Good	X	
Kölked–Feketekapu A	4	X			X	Good	X	
Környe	3	X		X	X	Good	X	X
Lukácsháza–Hegyalja dűlő	1							
Micheldorf– Schottergrube								
Mödling–Goldene Stiege								
Münchendorf	1	X			X	Good		
Nagyréde–Ragyogópart	1	X			X	Good	X	
Noşlac	1	X						
Solymár–Dinnye-hegy	1	X		X	X	Good		
Sommerein am Leithagebirge	1	X			X	Good		
Štúrovo	1	X			X	Not conserved		
Szekszárd-Bogyiszlói út	2	X			X	Good	X	
Táp–Borbapuszta	2		X					
Üllő II.–Vecsési községhatár	1	X			X	Good	X	
Váchartyán–Gosztonyi szőlőhegy	1	X		X	X	Fragmentary		
Valalíky–Všechsvätých	2	X			X	Good		
Vasasszonyfa	1							
Visonta–Nagycsapás	1		X					

Site	No.	Publication	Excavation report	Anthr. data	Grave goods	Preservation	Place in grave	Metallogr.
Vösendorf	1		X					
Wien XI. Simmering, Csokorgasse	6		X		X			
Wien XXIII Zwölfaxing	2	X						
Záhorská Bystrica	1	X			X	Fragmentary	X	
Zalacomár–Lesvári dűlő	4		X					
Želovce	1	X			X	Good	X	X
Zillingtal	4	X			X	Good	X	X

Research on seaxes started relatively late in the Carpathian Basin. Seaxes in Avar cemeteries were first identified by Ján Eisner,<sup>178</sup> and Attila Kiss described seaxes from Avar cemeteries in his unpublished MA thesis, where he linked their appearance to a Carolingian weapon trade.<sup>179</sup>

Research on this weapon type has mainly been limited to the northern and western periphery of that area occupied by the Avar Qaganate, partly because the main distribution of these weapons overlaps in this area. The first summary of these seaxes was by Jozef Zábajník, in his survey of weapons of western origin in Avar burials.<sup>180</sup> Long knives found in Avar burials in the Carpathian Basin were also studied by János Győző Szabó who regarded them as weapons, though he rejected any relationship to seaxes.<sup>181</sup>

Erik Szameit studied seaxes from Avar-age burials in his paper on Carolingian weapons from Austria. He described their main distribution as in the Vienna Basin and dated them to the second half of the 7th and the 8th century.

<sup>178</sup> Eisner 1932, 553–559.

<sup>179</sup> Kiss listed 12 examples. He regarded the appearance of seaxes as a Late Avar phenomenon in the 8th century. He observed their distribution in the western part of the Carpathian Basin. (Kiss 1962, 90–92).

<sup>180</sup> Zábajník 1978, 193–195.

<sup>181</sup> Szabó 1966, 50; Szabó 1968, 40).

He regarded some of them as Avar copies of Frankish products.<sup>182</sup> Seaxes are treated as Carolingian imports in more recent Austrian research.<sup>183</sup>

Béla Miklós Szóke observed the popularity of the seaxes in the Late Avar period (8th–9th century), and argued that they were not unknown to the Avars, despite some being western imports which suggests that such weapons were suitable for the fighting techniques of the Avars.<sup>184</sup> Central European (German) research on seaxes will be presented in chapter VI.3.

#### 1.4.1 Classification

The classification of the seaxes is primarily metric, and this approach to their primary attributes will be used in this study. These main attributes are the length and the width of the blade, upon the basis of which four types can be identified: short seaxes (E.IV.A: *Kurz sax*), narrow seaxes (E.IV.B *Schmalsax*) (fig. 82), broad seaxes (E.IV.C *Breitsax*) and long seaxes (E.IV.D *Langsax*) (fig. 13).

Three variants can be distinguished based on the form of the blade: a. blades with a straight back, the tip located on the back of the blade (Wernard I); b. the back is curved, the edge is straight, and the tip is on the edge (Wernard II); c. symmetric seax blades, and the tip located on the midline of the blade (Wernard III). These blade types also have a metric basis, with the a. type blade (Wernard I) being common on short and narrow seaxes (*Kurz-* and *Schmalsax*), b. type blades (Wernard II) associated with long seaxes (*Langsax*), and finally blades of c. type (Wernard III) are characteristic of broad seaxes (*Breitsax*).<sup>185</sup>

##### 1.4.1.1 *Short Seax* (*Kurz sax*, E.IV.A)

Short seaxes (*Kurz sax*) are edged weapons with a short, single-edged blade, and cannot be easily distinguished from knives in most cases. Therefore, various morphological aspects were used for separating these weapons from tools, with a blade length of more than 20 cm identified as a primary attribute.<sup>186</sup>

182 Szameit 1987, 164.

183 Falko Daim (1998, 108–109) treated seaxes as imports and used them to determine chronological alignments.

184 In spite of the popularity of seaxes in Avar cemeteries, double-edged swords were mainly used in Moravia, the Eastern Alps, Slavonia and Dalmatia (Szóke 1992a, 95; Szóke 1999, 85). Szóke first linked the appearance of seaxes to events at the end of the 8th century (Carolingian wars) (Szóke – Vándor 1982–83, 73–74) but later noted that these weapons were already in use during the 7th century in the Zala valley (Szóke 2002; Szóke 2007, 141).

185 Wernard 1998, 749–750.

186 Zlata Čilinská (1966, 184) called every knife over 20 cm in blade length warrior-knives (*dyka* in Slovakian or *Kampfmesser* in German). Jozef Zábajník (1995, 252) regarded



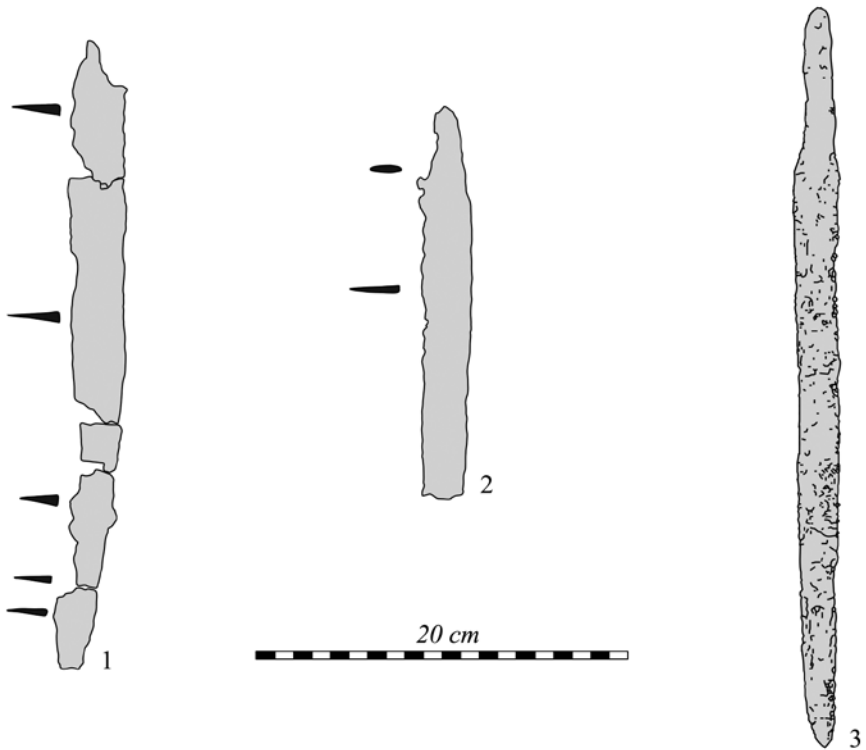


FIGURE 82 *Short and narrow seaxes (E.IV.A–B)* 1. Környe, grave No. 18 (Salamon – Erdélyi 1971, 15.); 2. Környe, grave No. 97 (Salamon – Erdélyi 1971, 23, Taf. 15; Simon 1991, 297.); 3. Budapest XIV. Zugló, Népstadion, grave No. 5 (Lipták 1963, 331; Nagy 1973, 201–202; Lipták 1983, 51, 62, 78–88, 90; Nagy 1991, 443, No. 43; Nagy 1998, 109, II. Taf. 84B/2.).

As well as size, other attributes like the curved back or the existence of a fuller have also been used for distinguishing short seaxes from knives (map 37, fig. 83).

These weapons are mainly known from the Early Avar cemeteries of Eastern Transdanubia which demonstrate strong Merovingian influences;<sup>187</sup> however,

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knives over the blade length of 15 cm weapons. Ursula Koch (1977, 106) described short seaxes of 20–25 cm blade length and of 2.8–3 cm blade width, while the system of Jo Wernard (1998, 774–775) used a blade length of 18 cm as a distinguishing attribute.

187 Kölked–Feketekapu A grave No. 29, 31 and 39 (Kiss 1996, 27. Taf. 24/1, 29, 228, Taf. 26/19); Környe grave No. 18, 66 and 97 (Salamon – Erdélyi 1971, 15, 20, Taf. 9/19–21; 23); Szekszárd-Bogyiszlói út grave No. 44 (Rosner 1999, 16, Taf. 4/3).

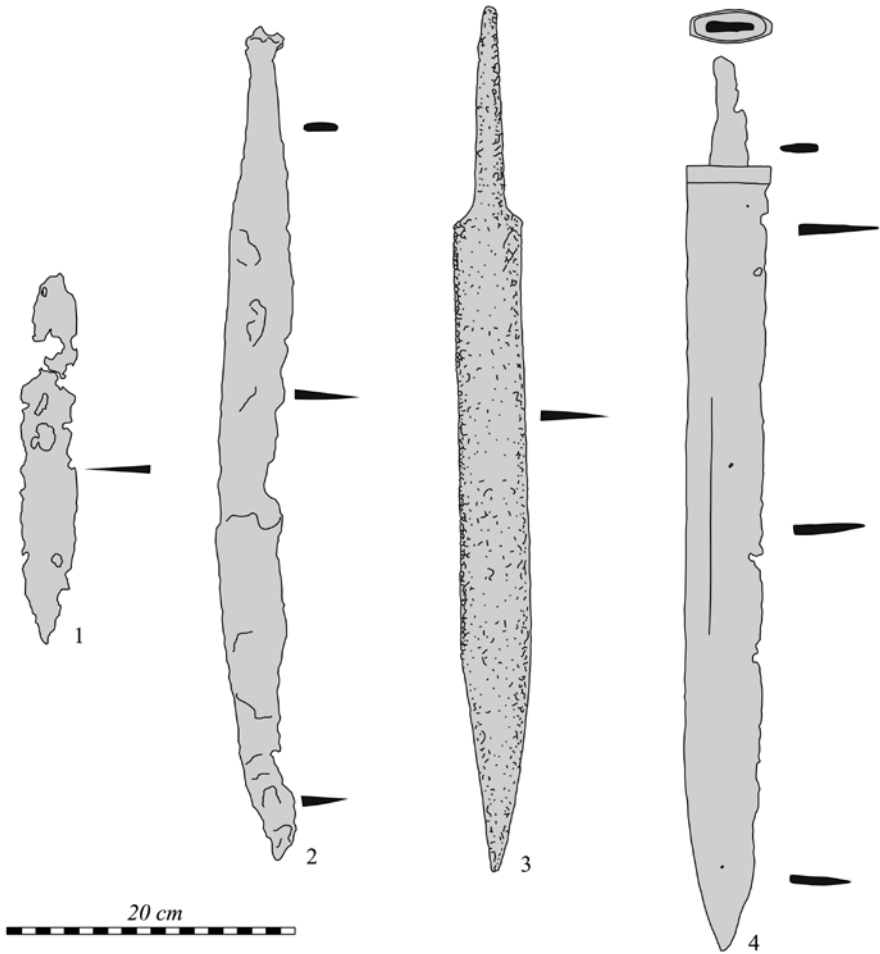


FIGURE 83 *Broad seaxes (E.IV.C)* 1. Bratislava–Devínska Nová Ves–Atehel'ňa, grave No. 124 (Eisner 1952, 41–42, Obr. 19/5.); 2. Komárno–8 Shipyard, grave No. 78 (Trugly 1987, 268., Abb. 8., Taf. xx/6.); 3. Kölked–Feketekapu A, grave No. 324 (Kiss 1996, 91–92, Taf. 68/12.); 4. Solymár–Dínye-hegy, grave No. 20 (Török 1994, 10, 31, Taf. 1x/1.).

these weapons were also found in Gepid cemeteries in Transylvania (map 37).<sup>188</sup> Their appearance has therefore been linked to a local Germanic population or at least representative of significant Merovingian cultural influence. Short

<sup>188</sup> Noşlac grave No. 25 (Rusu 1962, 276, fig. 4/16).

seaxes are often buried together with spathae as a secondary weapon,<sup>189</sup> this association being well documented in Merovingian cemeteries.<sup>190</sup>

Anthropological data are only available for the Környe cemetery, according to which these weapons were either used by adult men as a secondary weapon,<sup>191</sup> or by adolescent or juvenile boys.<sup>192</sup> More recent studies suggest that such weapons were used by boys before attaining full social age and thus the right of using a spatha.<sup>193</sup> A similar phenomenon is also supposed in the case of the Early Avar cemeteries in Transdanubia regarding their Merovingian contacts.

All short seaxes are dated to the first half of the Early phase, their role being substituted by narrow seaxes and light broad seaxes.

#### 1.4.1.2 *Narrow Seax* ('Schmalsax', *E.IV.B*)

Narrow seaxes (*Schmalsaxe*) are edged weapons with a blade 30–40 cm long, and the tip is located on the back of the blade (type 'c'). The metric border between the short and narrow seax has been variously determined by different researchers but being largely within the same narrow range.<sup>194</sup> In what follows, knives of 30–40 cm blade length will be classified as being of this type, the blade width of which is narrower than 3.5 cm (map 37, fig. 83).<sup>195</sup>

189 Kölked–Feketekapu A grave No. 39 (Kiss 1996, 29, 228, Taf. 26/19); Környe grave No. 66 and 97 (Salamon – Erdélyi 1971, 20, Taf. 9/19–21, 23).

190 For the Merovingian deposition of spatha with short seax, see: Steuer 1970, 359; Wernard 1998, 774–775. For its Scandinavian examples: Jørgensen 1999, 46. In Gepidic cemeteries: Hódmezővásárhely–Kishomok grave No. 1 (Bóna–Nagy 2002, 41–42); Hódmezővásárhely–Kishomok grave No. 7 (Bóna–Nagy 2002, 43–44); Hódmezővásárhely–Kishomok grave No. 64 (Bóna–Nagy 2002, 59–61); Szentes–Nagyhegy grave No. 8 (Csallány 1961, 46); Szolnok–Szanda grave No. 195 (Bóna – Nagy 2002, 230); Szőreg–Téglagyár grave No. 68 (Nagy 2005, 131). I am indebted to Attila Kiss for the information on Gepidic cemeteries.

191 Környe grave No. 66 and 97 (Salamon–Erdélyi 1971, 20, Taf. 9/ 19–21; 23).

192 Környe grave No. 18 (Salamon–Erdélyi 1971, 15).

193 For age groups in Merovingian weapon burials: Brather 2004b, 30.

194 Narrow seaxes were defined by Kurt Böhner (1958, 136) as having a blade length between 26 and 48 cm and with a blade width between 2.4 and 3.4 cm. Ursula Koch (1977, 106) established a metric determination of 29–36 cm blade length and 3 cm blade width. Different values are used in Scandinavia by Anne Nørgård Jørgensen (1999, 50): she defined narrow seax ('Schmalsax') (SAX1) with a blade length of 27 to 52 cm, and a blade width between 2.2 and 3.6 cm.

195 Ártánd–Kapitány-dűlő grave No. 136 (Kralovánszky 1996, 52. 14. kép); Budapest XIV. Zugló, Népstadion grave No. 5 (Nagy 1998, 109, 11. Taf. 84B/2); Dormánd–Hanyipusztá, stray find (Szabó 1966, 50. XIV. t. 7); Győr–Téglavető-dűlő grave No. 867 (XJM 53.278.1102); Jászapáti–Nagyállás út grave No. 410 (Madaras 1994, 96, Taf. L/6); Kisköre–Halastó grave No. 23

Narrow seaxes remained in use from the second half of the 6th to first half of the 7th century across the Merovingian territory.<sup>196</sup> Most of these weapons were found in Middle phase burials (second half of the 7th century) in the Carpathian Basin. According to the view of Győző János Szabó these weapons were used as bowie knives, with no connection to the development of seaxes.<sup>197</sup> However, due to their short chronology and limited geographical distribution, their function may be considered to be weapons. The examples from the Carpathian Basin cannot be identified with Merovingian narrow seaxes but they show similar tendencies in their development. Most of these weapons are dated to the Middle phase<sup>198</sup> but they remained in use during the first half of the 8th century.<sup>199</sup>

The main distribution area of these weapons is in the northern part of the Great Hungarian Plain<sup>200</sup> but some examples are also known from Transdanubia and Southwestern Slovakia (map 37).<sup>201</sup> This distribution area and their chronological difference exclude the possibility of a western origin for this weapon, suggesting that it was probably invented locally.

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- (Garam 1979, 11–12. Taf. 7; Taf. 29/1); Nagyréde–Ragyogópart grave No. 9 (Szabó 1968, 40. VIII t. 11); Štúrovo–Vojenské cvičisko grave No. 224 (Točík 1968b, 59. Taf. XLV/18); Štúrovo–Obid grave No. 8 (Točík 1992, 97–98. Obr. 61/22).
- 196 Kurt Böhner (1958, 137–138) dated narrow seaxes to his IIIth–IVth stages (Stufe), while Ursula Koch (1977, 107) dated them to the 2nd–3rd phase (545–600) of the Schretzheim-cemetery.
- 197 Szabó 1966, 50; Szabó 1968, 40.
- 198 Budapest XIV. Zugló, Népstadion grave No. 5 (Nagy 1998, 109, 11. Taf. 84B/2); Dormánd–Hanyipuszta, stray find (Szabó 1966, 50. XIV. t. 7); Győr–Téglavető-dűlő grave No. 867 (XJM 53.278.1102); Jászapáti–Nagyállás út grave No. 410 (Madaras 1994, 96, Taf. L/6); Nagyréde–Ragyogópart grave No. 9 (Szabó 1968, 40. VIII t. 11); Štúrovo–Vojenské cvičisko grave No. 224 (Točík 1968b, 59. Taf. XLV/18).
- 199 Ártánd–Kapitány-dűlő grave No. 136 (Kralovszky 1996, 52. 14. kép); Kisköre–Halastó grave No. 23 (Garam 1979, 11–12. Taf. 7, Taf. 29/1) and Štúrovo–Obid grave No. 8 (Točík 1992, 97–98. Obr. 61/22) dated by cast bronze belt-sets.
- 200 Ártánd–Kapitány-dűlő grave No. 136 (Kralovszky 1996, 52. 14. kép); Budapest XIV. Zugló, Népstadion grave No. 5 (Nagy 1998, 109, 11. Taf. 84B/2); Dormánd–Hanyipuszta, stray find (Szabó 1966, 50. XIV. t. 7); Jászapáti–Nagyállás út grave No. 410 (Madaras 1994, 96, Taf. L/6); Kisköre–Halastó grave No. 23 (Garam 1979, 11–12. Taf. 7; Taf. 29/1); Nagyréde–Ragyogópart grave No. 9 (Szabó 1968, 40. VIII t. 11).
- 201 Győr–Téglavető-dűlő grave No. 867 (XJM 53.278.1102); Štúrovo–Vojenské cvičisko grave No. 224 (Točík 1968b, 59. Taf. XLV/18); Štúrovo–Obid grave No. 8 (Točík 1992, 97–98. Obr. 61/22).

### 1.4.1.3 *Broad Seax* ('Breitsax': *E.IV.C*)

Broad seaxes ('*Breitsaxe*') are edged weapons with a blade width of more than 4 cm, and in some cases this even reach 58 mm, and the tip is located in the midline of the symmetrical blade (map 38, fig. 83). Light and heavy variants are evident among them, which also appears to represent a chronological difference.<sup>202</sup> Their blade length is between 30 and 45 cm<sup>203</sup> but the heavy broad seaxes can even reach 54 cm.<sup>204</sup> Altogether 15 examples are known from Avar-age burials.<sup>205</sup>

Broad seaxes first appeared at the beginning of the 7th century amongst Merovingian weaponry and remained in use until c. 680. The increase in their weight is a characteristic feature, the earlier examples being lighter than the later weapons, with a similar process also evident in a lengthening of the hilt.<sup>206</sup>

These developments are particularly evident in the Avar cemeteries where the light and heavy variants can be easily distinguished. Light broad seaxes also appeared during the Early phase in some Transdanubian cemeteries under Merovingian influences.<sup>207</sup> Both known examples are dated to the Early

202 This distinction was first used by Ursula Koch (1968, 84), and was verified by the horizontal stratigraphy of the Schretzheim-cemetery, where seaxes of 4–4.5 cm blade width are classified to the light variant, and seaxes of blade width of 4.8–5.6 cm classified to the heavy variant (Koch 1977, 107). These weapons are dated to 590/600–620/630 (Koch 1977, 25).

203 Wernard 1998, 771.

204 Hübener 1988, 227.

205 Bratislava–Devinska Nová Ves–A–Tehel'ňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5); Čataj I.–Zemanské-Gejzove grave No. 148 (Hanuliak – Zábójník 1982, 498); Csolnok–Szedres, Kenderföldek grave No. 7 (Erdélyi 1988, 193); Kehidakustyán–Kehida, Központi Tsz-major grave No. 10 (Szóke 2002, 77, 9/d); Komárno–6 Hadovce grave No. 24 (Čilinská 1982, 361. T. xvii/1); Komárno–8 Shipyard grave No. 78 (Trugly 1987, 268. Abb. 8. Taf. xx/6); Kölked–Feketekapu A grave No. 324 (Kiss 1996, 91–92. Taf. 68/12); Solymár–Dinnye-hegy grave No. 20 (Török 1994, 10. 31. Taf. 1x/1); Sommerein am Leithagebirge grave No. 74/A (Daim – Lippert 1984, 47, 231, Taf. 50/10); Štúrovo–Vojenské cvičisko grave No. 208 (Točík 1968b, 55, Taf. xlii/19); Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1975–76, 881. v. t. 13; Simon 1991, 306; Rosner 1999, 49, Taf. 24/14); Visonta–Nagycsapás grave No. 74 (Nagy 1970, 56); Zagreb–Kruge, prudiste Strbca grave No. 4 (Vinski 1960, 52); Želovce grave No. 311 (Čilinská 1973, 91, Taf. lii/23); Zillington grave No. D-451 (Daim 1998, 102, 108. Taf. 14/1).

206 The appearance of the light broad seaxes is dated to the 7th south German phase (580–600) by Ursula Koch (2001, 87). Heavy broad seaxes appeared during the 1vth phase of the Schretzheim cemetery (Koch 1977, 107), which is parallel with the 2b phase of Wernard's system (600/610–630/40) (Wernard 1998, 776–778).

207 Kölked–Feketekapu A grave No. 324 (Kiss 1996, 91–92. Taf. 68/12); Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1975–76, 881. v. t. 13; Simon 1991, 306; Rosner 1999, 49, Taf. 24/14).

phase by their belt-sets,<sup>208</sup> the chronology of these finds and their geographical position emphasising the continuity between the Early and Middle phases.

The heavy variant is a characteristic weapon of the Middle phase,<sup>209</sup> and remained in use until the beginning of the Late phase. A good example of these heavy broad seaxes was found in grave No. 20 at Solymár (fig. 83/4), equipped with a crossguard of pentagonal cross section, cast of copper alloy, and with a narrow groove on its blade,<sup>210</sup> the a short hilt.<sup>211</sup> A direct analogy of this crossguard was found in grave No. 221 at Záhorská Bystrica<sup>212</sup> and Zagreb–Kruge.<sup>213</sup> The seax of Solymár is dated to the second half of the Middle phase by the belt-set and horse harness in the burial.<sup>214</sup>

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208 The seax from Kölked is dated by a three-part belt-set made of iron with inlaid decoration to the first third of the 7th century (Kiss 1996, 91, 205, 211), and is therefore contemporary with Merovingian weapons of similar type (Christlein 1966; Ament 1976, 335; Martin 1989, 65–70; Martin 1996, 346–350). The seax from Szekszárd is dated by its U-shaped broad strap-end made of silver foil to the border of Early and Middle phase (middle of the 7th century. (Rosner 1999, 49, for the chronology of these strap-ends: (Rácz 1999, 365). The weapon of grave No. 7 from Csolnok is dated to the Early phase, too (Erdélyi 1988, 193).

209 Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5); Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5); Kehidakustyán–Kehida, Központi Tsz-major grave No. 10 (Szóke 2002, 77, 9/d); Solymár–Dinnye-hegy grave No. 20 (Török 1994, 10, 31, Taf. IX/1); Sommerein am Leithagebirge grave No. 74/A (Daim – Lippert 1984, 47, 231, Taf. 50/10); Želovce grave No. 311 (Čilinská 1973, 91, Taf. LI1/23); Zillingtal grave No. D-451 (Daim 1998, 102, 108, Taf. 14/1).

210 Török 1994, 10, 31, Taf. IX/1.

211 Gyula Török (1994, 31, 62, jegyzet) explained the shortness of the hilt in terms of its function as a prestige object, since he supposed that it could not be used as weapon. This interpretation is uncertain because of the weapons fragmentary state. However, the hilt of this weapon was surely shorter than the usual broad seaxes of the Merovingian west (Wernard 1998, 778).

212 L'udmila Kraskovská (1972, 42, 78, Obr. 44) supposed that the hilt of the weapon ended in a knob, although the iron rod with the spherical knob is probably a part of a double-hammer (the so-called 'fokos' in Hungarian).

213 Vinski 1960, 52.

214 The burial is dated by a strap-end stamped of silver foil with rhombic glass inlay, phalerae stamped of gold foil, and stirrup with straight sole (Török 1994, 31).

The main distribution area of the heavy variant is in the western half of the Carpathian Basin, mainly in its northwestern periphery,<sup>215</sup> and the Zala valley,<sup>216</sup> but they were also found in the Ipoly valley<sup>217</sup> and even east of the Danube (map 38).<sup>218</sup> The great number of finds in the northwestern Carpathian Basin may suggest its place of transmission.

The seaxes from Komárno on the northern shore of the Danube are classified as a distinct group,<sup>219</sup> despite their broad and symmetric blade being characteristic of broad seaxes. They are dated to the Late phase by association with cast bronze belt-sets.<sup>220</sup> This type is probably equivalent to a transitional type between broad and long seaxes.<sup>221</sup> Accordingly, this variant is only characteristic of a small area on the northern shore of the Danube and was used in the second half of the 8th century. It is important to note that there appears to have been a chronological time gap compared with the western Merovingian area; a salutary warning against an uncritical application of broad chronological models which may not be suitable for the interpretation of regional differences.

Broad seaxes had already appeared in the second half of the Early phase in some Transdanubian cemeteries under Merovingian influence but only became a characteristic part of Middle Avar weaponry in the second half of the 7th century, in conjunction with a geographical shift towards the northwest.

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215 Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5); Čataj I.–Zemanské-Gejzove grave No. 148 (Hanuliak – Zábójník 1982, 498); Komárno–6 Hadovce grave No. 24 (Čilinská 1982, 361, T. xvii/1); Komárno–8 Shipyard grave No. 78 (Trugly 1987, 268. Abb. 8. Taf. xx/6); Sommerein am Leithagebirge grave No. 74/A (Daim – Lippert 1984, 47, 231, Taf. 50/10); Štúrovo–Vojenské cvičisko grave No. 208 (Točík 1968b, 55, Taf. xlii/19) Zillingtal grave No. D-451 (Daim 1998, 102, 108. Taf. 14/1).

216 Kehidakustyań–Kehida, Központi Tsz-major grave No. 10 (Szóke 2002, 77, 9/d).

217 Želovce grave No. 311 (Čilinská 1973, 91, Taf. lii/23).

218 Visonta–Nagycsapás grave No. 74 (Nagy 1970, 56).

219 Komárno–6 Hadovce grave No. 24 (Čilinská 1982, 361, T. xvii/1); Komárno–8 Shipyard grave No. 78 (Trugly 1987, 268. Abb. 8. Taf. xx/6); Štúrovo–Vojenské cvičisko grave No. 208 (Točík 1968b, 55, Taf. xlii/19).

220 The seaxes of grave No. 24 of Komárno–Hadovce (Čilinská 1982, 361; T. xvii) and grave No. 78 of Komárno–8 Shipyard (Trugly 1987, 268. Abb. 8. Taf. xx) are dated to the second half or end of the 8th century by cast bronze belt-set decorated by fleur-de-lis. For the chronology of these belt-sets (SPA III: Stadler 1985; SS IV: Zábójník 1991, 241; Szalontai 1995, 129). The grave No. 208 of Štúrovo (Točík 1968b, 55, Taf. xlii) is similarly dated by the cemetery's horizontal stratigraphy (Zábójník 1995, 227. Abb. 16).

221 The type was identified in the cemetery of Donaueschingen (Buchta-Hohm 1996, 37).

1.4.1.4 *Long Seax* ('Langsax': *EIV.D*)

The term long seax is not standardized in the literature, since various metric boundaries have been used by different authors. The blade of long seaxes are usually longer than 50–60 cm and narrower than 4–5 cm.<sup>222</sup> According to the definition used here, long seaxes have a blade length of more than 50 cm, while their blade width is narrower than 4 cm (map 39, fig. 84). The tip of the blade is in the midline of the blade or on the line of the edge. The scabbard of these long seaxes can be decorated with small buttons stamped of copper alloy sheets, as in the case of the seax from grave No. 144 at Zalakomár–Lesvári dűlő.<sup>223</sup> This is the only example with decorated scabbard in the Carpathian Basin, though this type of decoration is well known from Merovingian and early Carolingian cemeteries.<sup>224</sup>

The long seaxes appeared at the end of the 7th century in the late Merovingian cemeteries of Germany. The internal typo-chronology of long seaxes is based on metric data,<sup>225</sup> and later the grooves on the blade were also suggested as a chronological attribute.<sup>226</sup> The blade form was also later used as a basis for making chronological distinctions: symmetric blades being regarded as being earlier than asymmetric ones.<sup>227</sup> An alternative method of dating the

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222 Joachim Werner (1955, 9) defined long seaxes by their length, which included the length of the hilt, defining every single-edged blades over the length of 60 cm as a long seax. Kurt Böhner (1958, 144) distinguished these weapons based on the form of the blade: only weapons with their tip on the line of the edge were identified as long seaxes. Hermann Ament (1976, 80) emphasised the narrower blade, while according to the definition of Frauke Stein (1967, 182), long seaxes were edged weapons with a length between 66 and 88 cm and a curved back. Wolfgang Hübener (1989, 75) even distinguished a type called '*langsaxähnliche Waffen*' (weapons similar to long seaxes), the blade length of which is shorter than 50 cm, while Jo Wernard (1998, 771) used a metric border of 48 cm.

223 Szőke 1982–83, 70–72, 1. kép; Szőke 2000, 494, Taf. 12.

224 Dannheimer 1974, 131–140; Buchta-Hohm 1996, 41.

225 According to the view of Wolfgang Hübener (1989, 75) the blade length of long seaxes was rising constantly, while their width decreased.

226 Frauke Stein (1967, 12) dated the seax blade with one groove to an earlier period than that of those with double-grooves.

227 Jörg Kleemann (2002, 107–109) dated symmetric blades (his 1st type) to the Saxonian I–II<sup>nd</sup> phase, and asymmetric blades with curved back to the II–IV<sup>th</sup> phase. This system was improved upon by Ralph Pöllath (2002, 169), who distinguished four based-variants of long seaxes: LS 1 symmetric blade, LS 2 symmetric blade, longer than 60 cm, LS 3 asymmetric blade, and the tip closer to the blade, LS 4 the edge is a straight line, while the back is curved. These minute distinctions, however, have not been verified by further research, since the change in blade form was more protracted and complex, incorporating several transitional forms.



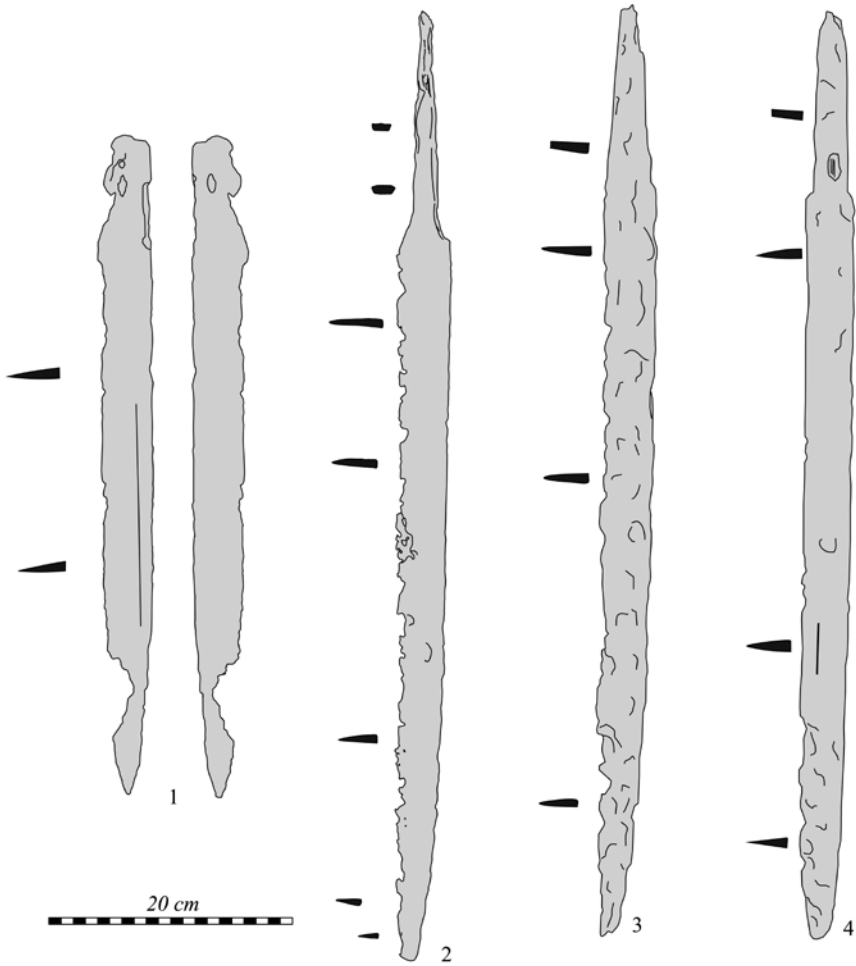


FIGURE 84 *Long seaxes (E.IV.D)* 1. Bratislava–Devínska Nová Ves–Atehel'ňa, grave No. 412 (Eisner 1952, 94–95, Obr. 47/1.); 2. Dunaszeg–Gyula-major (Hédervár–Gyulamajor) (Lovas 1929b, 49; Fetting 1943, 7, Taf. XXXVIII. 1a–1b.); 3. Valalčky–Všechsvätých, grave No. 42 (Pástor 1982, 307–308, Obr. 11/1.); 4. Valalčky–Všechsvätých, grave No. 84 (Pástor 1982, 315, Obr. 16/1.).

development of long seaxes is metallographical examination of their pattern welding.<sup>228</sup>

228 Herbert Westphal (1991, 337) distinguished four phases in Saxonian seaxes based on their technical characteristics. Seaxes of the I<sup>st</sup> and II<sup>nd</sup> phased are characterised by flat grooves or veneer pattern welding (*Furnierdamast*). III<sup>rd</sup> phase is characterised by

Long seaxes are relatively common weapons in the Late Avar Carpathian Basin, with 25 such examples known from Avar burials. These weapons are mainly distributed in the northern and western periphery of the Avar Qaganate, in Southwestern Slovakia<sup>229</sup> and Northwestern Hungary,<sup>230</sup> the Vienna Basin<sup>231</sup> and Western Hungary (Vas<sup>232</sup> and Zala counties<sup>233</sup>), whereas only three examples were found east of the Danube (map 39).<sup>234</sup> This distribution of long seaxes represents their decreasing occurrence from west to east. Its appearance in the Košice Basin in the northeastern part of the Avar Qaganate might be explained by the strong connections of this region to the area of the Southwestern Slovakia (figs. 84/3–4).

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- double-grooves on both sides of the narrower blades accompanied by 'Winkeldamast' and welts. The elaborate narrow inlaid technique only appeared during the last (1vth) phase.
- 229 Bernolákovo–Sakoň grave No. 53 (Kraskovská 1962, 436–437; Obr. 11. Tab. x1/5); Bratislava–Čuňovo grave No. 127 (Hampel 1905, II. 158–159. III. Taf. 134); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 412 (Eisner 1952, 94–95, Obr. 47/1.); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 524 (Eisner 1952, 119–120, Obr. 71/1); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 840 (Eisner 1952, 180, Obr. 85/1); Čataj I.–Zemanské-Gejzove grave No. 151 (Hanuliak – Zábajník 1982, 498).
- 230 Dunaszeg (Hédervár)–Gyula-major (Lovas 1929b, 49; Fettich 1943, 7, Taf. xxxviii. 1a–b).
- 231 Brunn a.d. Schneebergbau–Hochquellenwasserleitung (Daim 1979, 69; Zábajník 1995, No. 14; Winter 1997, 178–179, No. 3); Micheldorf–Schottergrube grave No. 1 (Kaschnitz – Abramić 1909; Reitinger 1968, 504; ADAM, 240); Münchendorf grave No. 38 (Mitschamärheim 1941, 32. Taf. 17/10); Wien xxiii Zwölfaxing I. grave No. 3 (Lippert 1966, 116–117); Zillingtal grave No. D-372 (Daim 1998, 101, 108, Taf. 8/1); Zillingtal grave No. D-418 (Daim 1998, 101–102, 109. Taf. 11/1); Zillingtal grave No. D-469 (Daim 1998, 103, 109. Taf. 17/1).
- 232 Lukácsháza–Hegyalja dűlő grave No. 15, 45, 75; Vasasszonyfá grave 'B' (MNM 8/1951.17; Kiss G. 1985, 15. tábla 4).
- 233 Zalakomár–Lesvári dűlő grave No. 26A (Szőke 2002, 77. 9/a); Zalakomár–Lesvári-dűlő grave No. 89 (Szőke 2002, 82, 11); Zalakomár–Lesvári dűlő grave No. 144 (Szőke 1982–83, 70–72, 1. kép; Szőke 2000, 494. Taf. 12); Zalakomár–Lesvári dűlő grave No. 175 (Szőke 2002, 80. 12).
- 234 Űllő 11.–Vecsési községhatár grave No. 77 (Sós 1955, 199, 214. Pl. LXIV, 13); Valálíky–Všechsvätých grave No. 42 (Pástor 1982, 307–308, Obr. 11/1) and grave No. 84 (Pástor 1982, 315, Obr. 16/1).

Long seaxes appeared during the first half of the 8th century in Avar burials,<sup>235</sup> and remained in use until the first half of the 9th century.<sup>236</sup> A chronology based on forging technology is only possible for the seax from Grabelsdorf which is dated to the first half of the 8th century.<sup>237</sup> The popularity of long seaxes is explained by their similar function and use to single-edged swords (E.II).

#### 1.4.2 Typological Changes

The most striking development in the evolution of seaxes is the elongation of their blades and an increase in their width, which results in a relative increase in their overall weight. This heavier blade led to a longer hilt to ensure a more even distribution of weight, while the stability of the longer blade was enhanced by the addition of grooves.

This transformation of the blade was a significant development, and can be observed most clearly in the change in the location of the tip: while short seaxes are characterised by blade type 'A' (tips on the back), broad seaxes usually have a symmetrical blade with tip in the midline (type 'B'), and the narrower blades of long seaxes resulted in an asymmetrical blade with curved back and straight edge (type 'C'). These trends appear to be valid for seaxes in general, with the exception of those in Saxonia where broad seaxes are absent.<sup>238</sup>

235 These burials are dated by belt-sets: rectangular belt-mounts cut out of copper foil (Bernoláková–Sakoň grave No. 53 (Kraskovská 1962, 436–437. Obr. 11. Tab. XI/5); Grabelsdorf bei St. Kanzian am Klopeinersee (Szameit – Stadler 1993, 213–242. Abb. 2), rectangular cast mounts decorated by griffons (Bratislava–Čunovo grave No. 127 (Hampel 1905, II. 158–159. III. Taf. 134); Münchendorf grave No. 38 (Mitscha–Märheim 1941, 32. Taf. 17/10), cast strap-end decorated by animal-combat scene (Bratislava–Čunovo grave No. 127 (Hampel 1905, II. 158–159. III. Taf. 134); Münchendorf grave No. 38 (Mitscha–Märheim 1941, 32. Taf. 17/10) are all dated to the first half of the 8th century.

236 The examples from Valalíky grave No. 42 (Pástor 1982, 307–308, Obr. 11/1) and 84 (Pástor 1982, 315, Obr. 16/1) are dated to the second half of the 8th century, the seaxes from Zalakomár are dated to the turn of the 8th–9th century with the Zalakomár–Lesvári dűlő grave No. 26A, 89, 144 and 175 (Szőke 2002, 77. 9/a; 82, 11; 494. Taf. 12; 80. 12), while the long seax from Hédervár–Gyulamajor (Lovas 1929b, 49; Fettich 1943, 7, Taf. XXXVIII. 1a–1b) is probably dated to the first half of the Carolingian Period.

237 Erik Szameit and Peter Stadler (1993, 219) observed veneer pattern welding ('Furnierdamast') on this artefact, which technical feature is characteristic for the 1st–11th phase of Herbert Westphal (1991, 337).

238 Westphal 1991, 272.

The development of seax blades follows the same general developmental pattern with just some minor differences in the Avar settlement area. The difference between broad and long seaxes is not striking, and some transitional forms are known. An interesting feature is the wide blade of the longest examples, which is not common on Merovingian seaxes. There appears to be no specific formal or metric pattern for the changes in seaxes recognisable amongst the Avar burials.

#### 1.4.3 Function and Burial Context

Seaxes are the most common weapons of foreign origin during the Avar Age, though the reason for their popularity is not yet clear. The probable function of broad and long seaxes will be discussed in the following chapter, with particular attention given to their burial contexts (belt-sets, weapon combinations and horse burials) in order to achieve a better understanding for this wide usage.

Eleven seaxes were found in burials with horses which is mainly characteristic for long seaxes of the Late phase, but this custom had already appeared during the Middle phase in respect of the deposition of broad seaxes.<sup>239</sup> An especially interesting burial is known from Kehida–Fövényes where a long seax was buried in a cremation burial with an inhumation of a horse. According to its general interpretation, it was a burial of a Slavic warrior, combining the traditional Slavic burial rite of cremation with some Avar burial customs in the case of the horse and weapon burial rite.<sup>240</sup>

The popularity of seaxes during the Late Avar period was explained by Béla Miklós Szőke according to their having a similar function to single-edged swords, drawing particular attention to the absence of such finds in contemporary Moravia, Eastern Alps, Slavonia and Dalmatia, where the *spathae* were

239 This burial rite is mainly characteristic to the northern and western periphery of the Avar Qaganate: Bernolákovo–Sakoň grave No. 53 (Kraskovská 1962, 436–437; Obr. 11. Tab. XI/5); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 412 (Eisner 1952, 94–95, Obr. 47/1); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 524 (Eisner 1952, 119–120, Obr. 71/1); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 840 (Eisner 1952, 180, Obr. 85/1); Komárno–6 Hadovce grave No. 24 (Čilinská 1982, 361; T. XVII/1); Komárno–8 Shipyard grave No. 78 (Trugly 1987, 268. Abb. 8. Taf. xx/6); Valalíky–Všechsvätých grave No. 42 (Pástor 1982, 307–308, Obr. 11/1); Valalíky–Všechsvätých grave No. 84 (Pástor 1982, 315, Obr. 16/1); Zalakomár–Lesvári dúlő grave No. 144 (Szőke 1982–83, 70–72, 1. kép; Szőke 2000, 494. Taf. 12).

240 Szőke 2004, 372.

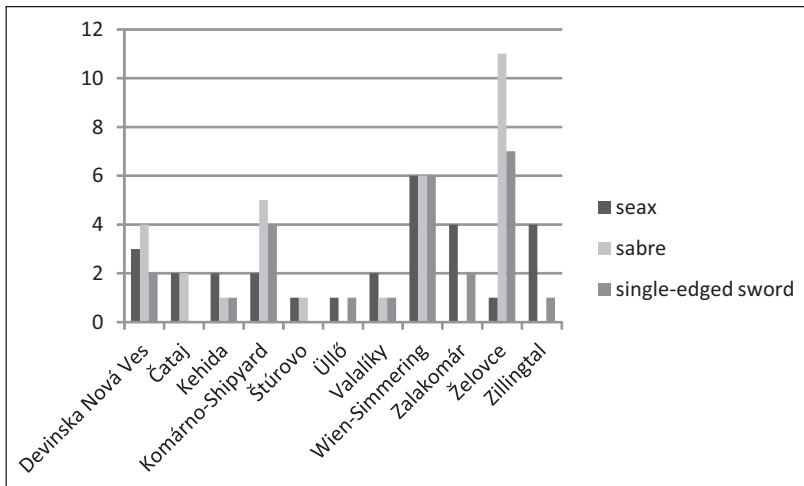


DIAGRAM 7 *Distribution of various edged weapons in Late Avar cemeteries.*

more popular. This distribution suggests that seaxes were not unusual weapons for the Avars, despite their being imported from the western territories.<sup>241</sup>

Seaxes were usually accompanied by arrowheads, being a common combination from the Early phase to the end of the Late phase. Their association with spears was also quite frequent during the Late phase in burials with horses.

Seaxes of the Late phase are usually known from cemeteries where sabres and single-edged swords were also found.<sup>242</sup> The proportion of these three weapon types from a number of examined cemeteries, presented in the following diagram, suggests that long seaxes were a common part of Avar weaponry.

## 2 The Fittings of Edged Weapons

### 2.1 *The Hilt*

The form and decoration of the hilt is an important attribute for determining the use of edged weapons, since it correlates with the centre of gravity of the weapon and the effectiveness of the cut. Three main positions of the hilt can be distinguished: 1. hilt at the edge, 2. hilt at the back of the blade and 3. hilt

<sup>241</sup> Szőke 1992, 95; Szőke 1999, 85.

<sup>242</sup> The distribution of long seaxes in the plan of the Devínska Nová Ves cemetery is shown in map LVI.

on the midline. Most of the hilts of Avar edged weapons are positioned on the midline of the blade.

The hilts of Avar sabres were usually straight, the only exception being that found in grave No. 3 at Cicău-Szelistye, the hilt of which forms an angle of 15 degrees with the midline of the blade.<sup>243</sup> The straight hilt is the main difference between Avar and early Hungarian sabres, since the hilts of sabres from the 10th–11th centuries were usually curved towards the edge of the blade.

Sword hilts could be decorated in various ways, and mostly ended in aommel or oval covering. Hilts were decorated with special rivets, among them ring-pendants. The hilt could be covered with gold, silver or copper alloy sheet: this decoration will be described in order from the end of hilt to the blade.

#### 2.1.1 Ring-pommel ('*Ringknauf*' in German)

Ring-pommel swords were weapons characteristic only of the Early phase, with no examples known from the Middle or Late phases. Ring-pommel swords are characterised by a ring at the end of the hilt, and are in German terminology referred to as '*Ringknaufschwert*'.<sup>244</sup> Although ring-pommel swords of the Avar Age can be single- or double-edged, their form, decoration and suspension is uniform (fig. 85).

Archaeological research on the Avars in the Carpathian Basin had already begun to investigate these weapons as early as the first half of the 20th century. Dezső Csallány attempted to create an inner division of the Early phase using these ring-pommel swords (known as the Csengele type): he regarded ring-pommel swords as later than swords with P-shaped suspension loops.<sup>245</sup> The first of these ring-pommel swords was found in Kunágota, although the function of the gold sheets, and therefore the form of the sword itself was only reconstructed by Gyula László relatively late (almost 100 years after its excavation).<sup>246</sup> Ring-pommel swords played a significant role in the research of Avar society: the swords from Bócsa (fig. 85/5) and Kecel decorated with gold sheets are regarded as the qagan's gift and status symbol.<sup>247</sup>

243 Winkler – Takács – Păiuş 1977, 270–271. fig. 4/1.

244 Voß 2003, 19–22.

245 Csallány 1939, 139–140.

246 The reconstruction of the gold-foils on the Kunágota find became possible by the discovery of the ring-pommel swords of Bócsa and Kecel in 1935. Gyula László first studied the iconography of the Byzantine box-fittings (László 1938), and reconstructed the sword based on the form of the Csengele-sword (László 1950).

247 László 1955, 231–232. 235.

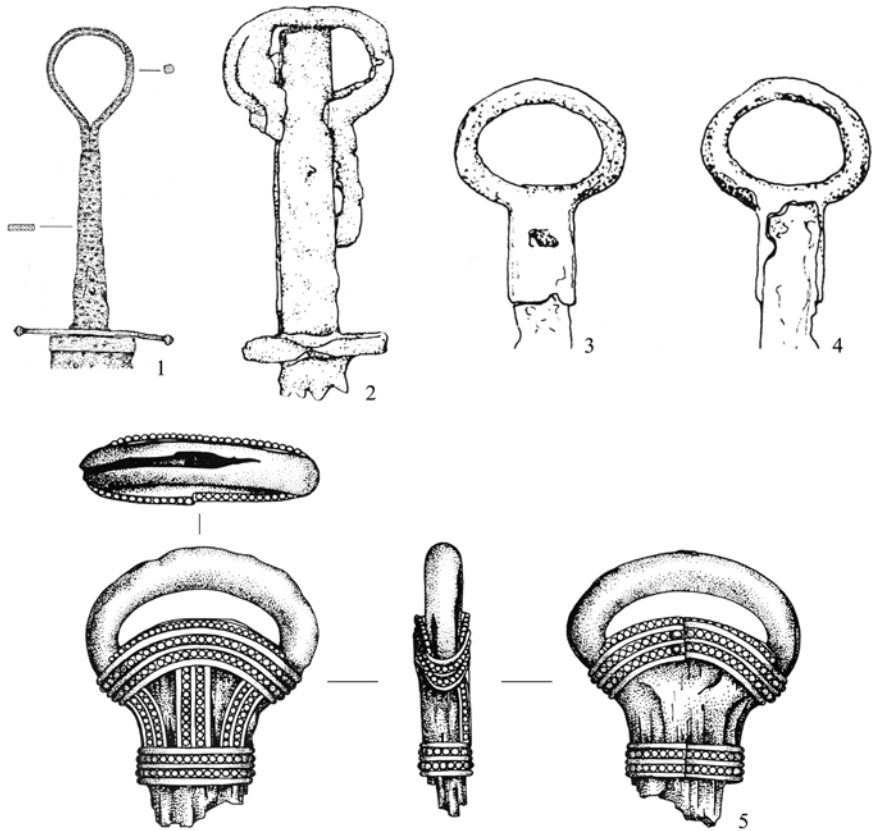


FIGURE 85 *Ring pommels*: 1. Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.); 2. Valea lui Mihai–Rétalj (Németi 1983, 145–146., Fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235., Fig. 265/5.); 3. Mandelos (Ercegovic – Pavlović 1973–74, 108, Fig. 1., I. t. 1, Fig. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 4. Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71., Taf. LI; László 1955, 228–230; XLIII. T. 1., 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21.).

Only 19 ring-pommel swords are known from the Carpathian Basin, six of them are double-edged and 11 are single-edged. No differences in their decoration can be detected, although undecorated variants of ring-pommel swords are known from Sopron<sup>248</sup> (fig. 85/1) and Biharkeresztes.<sup>249</sup>

Ring-pommel swords' questions of origin and their eastern analogies will be discussed in chapter VII.1 in detail.

248 János Gömöri cited Sarmatian analogies for this sword (Gömöri 1976, 143–150).

249 Károly Mesterházy (1987, 231–232) cited early Inner Asian analogies.

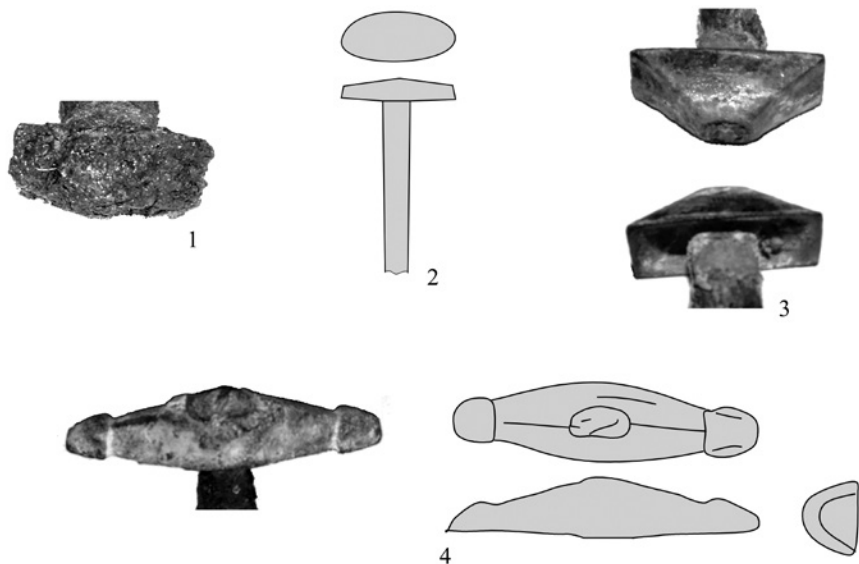


FIGURE 86 *Pommels*: 1. MG 1, 2. MG 2, 3. MG 4, 4. MG 3.

### 2.1.2 Spatha Pommels

Pommels are mainly used on the end of spatha hilts during the Avar Age. Their classification is based on western European models and therefore our main concern is whether chronological synchronisation is possible. The pommel is at the end of the trapezoid hilt-tongue and was made of iron or copper alloy (fig. 86). Spatha pommels can be divided into various types: boat-shaped pommels made of an iron sheet being known only from two graves of the Kölked cemetery,<sup>250</sup> both of them being dated to the Early phase. Flat almond-shaped iron pommels are known from two Early phase burials in South Transdanubia, both of them being probably dated to the first half of the 7th century.<sup>251</sup> A unique pommel cast of copper alloy and decorated with stylised animal heads is known from the Környe cemetery as a stray find which is dated to the end of the 6th century (fig. 86/4).<sup>252</sup>

250 Kölked–Feketekapu A grave No. 253 (Kiss 1996, 74, Taf. 55/1); Kölked–Feketekapu B grave No. 82 (Kiss 2001, 27–28, II. 28/10, 12).

251 Kölked–Feketekapu A grave No. 264 (Kiss 1996, 77–78; Taf. 59/12); Pécs–Köztemető grave No. 36 (Kiss 1977, 96. Pl. XXXVIII).

252 Salamon – Erdélyi 1971, 30, Taf. 33/3, Abb. 4/5.



Pyramid-shaped pommels cast of copper alloy (fig. 86/3) are only known from one Avar-age burial<sup>253</sup> but this type is much more common in Europe during the Merovingian Era.<sup>254</sup> Identical pommels are also known from 6th century Gepid<sup>255</sup> and Pannonian Lombard burials.<sup>256</sup> Such pommels found in Merovingian cemeteries of southern Germany have been dated to the second half of the 6th century,<sup>257</sup> while similar pommels have been dated to around 600 and the first decades of the 7th century in the Altenerding cemetery.<sup>258</sup> Examples from the Carpathian Basin have also been dated to the second half of the 6th century to the beginning of the 7th century.

The Late phase is characterised by flat triangular pommels composed of two parts: an oval iron sheet and a flat pyramidal iron pommel. Only two spathae with similar pommels are known from Late Avar burials of the Carpathian Basin.<sup>259</sup>

### 2.1.3 Hilt Caps

- 1 Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16)—E.III.C/2.a—Middle.
- 2 Budapest X. Rákos, Ejtőernyőstorony grave No. 19 (Nagy 1998, I. 71–72, II. Taf. 60)—E.II.A/1.a—Late.
- 3 Budapest XIV. Zugló, Tihanyi tér 6. (László 1941, 106–108, 109–112, Taf. IX–XII; Nagy 1998, I. 116, II. Taf. 91/11–15)—Middle.
- 4 Čoka – Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, Fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Mrkobrad 1980, 98, 152, LXXIX/7; Simon 1991, 289)—E.II.A/1.b—Early.
- 5 Gátér–Vasútállomás grave No. 212 (Kada 1906, 215., 218. és c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20) E.II.A/1.b—Early.
- 6 Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca grave No. 64 (Müller 1989, Abb. 2., 143–147, Abb. 3–5)—E.III.C/2.b—Middle.

253 Pécs–Köztemető grave No. 30 (Kiss 1977, 94–96, Pl. xxxvii/6–7); Tétény (ArchÉrt 1892, 380.1).

254 Their list: Menghin 1983, 319–321. 3. Liste, Karte 4; Losert – Pleterski 2003, Liste 514.

255 Szőreg grave No. 23 (Csallány 1961, 155, Taf. 183/5) and 68 (Csallány 1961, 161, Taf. 183/3).

256 Kajdacs (Bóna 1970–71, 61. Abb. 23/1); Pilisvörösvár (Bóna 1956, 194, Taf. 47); Szentendre grave No. 44 (Bóna 1970–71, 59, Abb. 4/3).

257 Koch 2001, 84–85.

258 Losert – Pleterski 2003, 402.

259 Wien–XXIII. Liesing grave No. 3 (Mossler 1948, 222); Želovce grave No. 124 (Čilinská 1973, 57, Taf. xxii/16).

- 7 Győr–Téglavető-dűlő grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39, XIV)—Early.
- 8 Győr–Téglavető-dűlő grave No. 756 (Börzsönyi 1908, 210–211).
- 9 Győr–Téglavető-dűlő grave No. 802 (Börzsönyi 1908, 218).
- 10 Igar–Vámszőlőhegy, Petőfi u. 56. grave No. '111' (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14)—E.III.B/2.b—Middle.
- 11 Jászapáti–Nagyállás út grave No. 412 (Madaras 1994, 97, Taf. LI/9).
- 12 Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187, Taf. I, Abb. 1)—E.III.B/1.b—Middle.
- 13 Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36).
- 14 Košice–Šebastovce grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XI1/7)—E.II.A/2.b—Late.
- 15 Košice–Šebastovce grave No. 230 (Budinský-Krička – Točík 1991, 49; Taf. XXXI/2)—E.III.B/2.e—Late.
- 16 Kölked–Feketekapu B grave No. 106 (Kiss 2001, 43–44, Taf. 32/9)—E.II.A/1.b—Early
- 17 Kölked–Feketekapu B grave No. 199 (Kiss 2001, 86–87, Taf. 56/10)—Late
- 18 Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15)—v.III.A/2.a—Middle
- 19 Kunpeszér–Felsőpeszéri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299) E.II.A/1.b—Early.
- 20 Leithaprodersdorf grave No. 123 (Mitscha-Mähreim 1957b, 32. Taf. VIII/14–15)—Late?
- 21 Leobersdorf–Ziegelei Polsterer grave No. 71 (Daim 1987, 241, Taf. 68/3)—E.II.A/2.a—Middle.
- 22 Madaras–Téglavető dűlő grave No. 23 (Rácz 1999, 349–350, 368)—E.III/2.a—Middle
- 23 Madaras–Téglavető dűlő grave No. 28 (Rácz 1999, 350, 368)—Middle
- 24 Ozora–Tótipusztá grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. tábla; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61. Taf. 62/8)—E.III.B/2.b—Middle
- 25 Tiszafüred–Majoros grave No. 326 (Garam 1995, 46. Abb. 19, 47, Taf. 83, 1–14, Taf. 177/2).
- 26 Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343, Fig. 6/1, 16; Simon 1991, 311, 16. kép 9)—E.I.B/1.b—Early.
- 27 Wien–XXIII. Liesing grave No. 21 (Mossler 1975, 86; Taf. VI/1)—E.III/1.a—Middle.

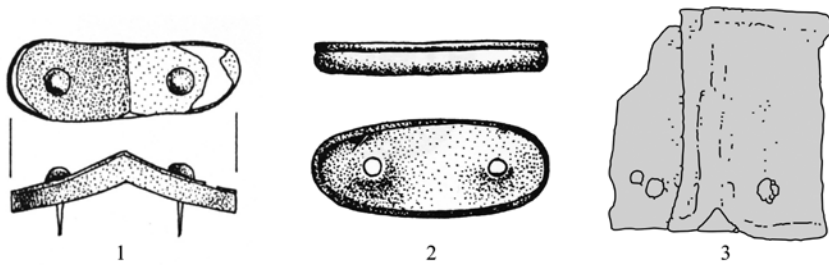


FIGURE 87 Hilt caps: 1. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5.); 2. Ozora–Tótipusztza, grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61, Taf. 62/8.); 3. Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1.; Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.).

In a number of cases the upper end of the hilt was covered by a cap made of a metal sheet. Hilt caps are usually made of copper alloy or silver sheets, the shape of the base is oval with a vertical rim. These caps are usually fixed by two rivets to the wood of the hilt (fig. 87). Most of the hilt caps are dated to the Middle phase (13 examples) but they had already appeared during the second half of the Early phase (six examples) and remained in use until the first half of the Late phase (five examples). Hilt caps mainly occur on the hilt-ends of sabres (nine pieces) but are also commonly used on single-edged swords (seven examples). Only two double-edged swords with hilt caps are known<sup>260</sup> which are probably as a result of their chronological position.

Oval hilt caps could also be made of gold<sup>261</sup> which usually occurred together with star-shaped crossguards covered with gold-foil, and date to the Middle phase. Silver hilt caps appeared at the end of the Early phase but only became common during the Middle and Late phase.<sup>262</sup> Oval copper alloy hilt caps are

260 Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343, fig. 6/1, 16; Simon 1991, 311, 16. kép 9).

261 Igar–Vámszőlőhegy, Petőfi u. 56. grave No. '111' (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Ozora–Tótipusztza grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61. Taf. 62/8).

262 Budapest x. Rákos, Ejtőernyőstorony grave No. 19 (Nagy 1998, I. 71–72, II. Taf. 60); Budapest XIV. Zugló, Tihanyi tér 6. (László 1941, 106–108, 109–112, Taf. IX–XII; Nagy 1998, I. 116, II. Taf. 91/11–15); Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218. c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20); Győr–Téglavető-dűlő grave No. 755 (Börzsönyi

not numerous,<sup>263</sup> while oval hilt caps made of tinned copper alloy are even rarer,<sup>264</sup> with those made of iron being the most common form.<sup>265</sup>

The basic form of these hilt caps remained unchanged from the second half of the Early phase. The chape of the scabbard is also sometimes covered with a similar cap, and is difficult to distinguish from the pommel cap. These chapes covered with caps are usually later than chapes made of long silver or gold foil.

The hilt cap from grave No. 64 at Gyenesdiás is of an unusual shape, being oval in plan but triangular in profile (fig. 87/1).<sup>266</sup> The silver hilt cap from grave No. 94 at Košice–Šebastovce is box-shaped with high rims (fig. 87/3).<sup>267</sup> A similar iron hilt cap is also known from grave No. 230 in the same cemetery.<sup>268</sup>

In several cases the sword or sabre did not survive as a consequence of grave robbing or environmental damage but hilt caps (or caps of chapes) attest to their original inclusion in the burial.

#### 2.1.4 Decorative Rivets

Hilts are often decorated with rivets of various shape and material, some of which have a considerable chronological or even social significance. Therefore the classification of these decorative rivets from the hilt is of great importance.

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- 1906, 320–321; Fettich 1943, 38–39, XIV); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187, Taf. I. Abb. 1).
- 263 Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295. 16. kép 5; Garam 1992, 142. Taf. 35–36); Kölked–Feketekapu B grave No. 106 (Kiss 2001, 43–44, Taf. 32/9); Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15); Madaras–Téglavető dűlő grave No. 28 (Rácz 1999, 350, 368).
- 264 Győr–Téglavető-dűlő grave No. 756 (Börzsönyi 1908, 210–211); Győr–Téglavető-dűlő grave No. 802 (Börzsönyi 1908, 218).
- 265 Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16); Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Mrkobrad 1980, 98, 152, LXXIX/7; Simon 1991, 289); Jászapáti–Nagyállás út grave No. 412 (Madaras 1994, 97, Taf. L1/9); Leithaprodersdorf grave No. 123 (Mitscha–Mähreim 1957b, 32. Taf. VIII/14–15); Leobersdorf – Ziegelei Polsterer grave No. 71 (Daim 1987, 241. Taf. 68/3); Madaras–Téglavető dűlő grave No. 23 (Rácz 1999, 349–350, 368); Tiszafüred–Majoros grave No. 326 (Garam 1995, 46. Abb. 19, 47, Taf. 83, 1–14; Taf. 177/2); Wien–XXIII. Liesing grave No. 21 (Mössler 1975, 86, Taf. VI/1).
- 266 Müller 1989, Abb. 2, 143–147, Abb. 3–5.
- 267 Budinský-Krička – Točik 1984, 174, Obr. 1; Obr. 4–5; Budinský-Krička – Točik 1991, 25–26, Taf. XII/7.
- 268 Budinský-Krička – Točik 1991, 49, Taf. XXXI/2.

2.1.4.1 *Ring-pendant*

Ring-pendants connected to an omega-shaped rivet on the hilt are frequent decorations on the Early phase swords (map 40, fig. 88/1–3). Such ring-pendants are mainly known from single-edged swords (13 examples), the number of double-edged swords with ring-pendants being much lower (four cases).<sup>269</sup> The hilts of two sabres were also similarly decorated.<sup>270</sup> Ring-pendants could be made of copper alloy,<sup>271</sup> silver<sup>272</sup> or iron.<sup>273</sup> József Csalog interpreted them as a social phenomenon: according to his view swords with ring-pendants were not suitable for fighting, and were instead interpreted only as ostentatious weapons.<sup>274</sup> István Bóna offered a different interpretation of this hilt decoration:<sup>275</sup> he held it a functional accessory for fixing the wrist strap of the sword.<sup>276</sup> The great number of ring-pendants made of iron contradicts their interpretation as merely ostentatious, however their symbolic significance

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- 269 Budakalász–Dunapart grave No. 458; Kölked–Feketekapu A grave No. 260 (Kiss 1996, 76, Taf. 57/1); Szegvár–Sáppoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52); Törökbálint 36/25. lelőhely grave No. 1 (Kovrig 1957, 119–120, xvii. t. 1–2. xviii. t. 1, 26. ábra).
- 270 Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4); Székkutas–Kápolnádűlő grave No. 541 (Nagy é.n. (2003) 71, 194, kép 1).
- 271 Aradac–Mečka grave No. 46 (Nađ 1959, 59, Tab. ix/11; Mrkobrad 1980, 98, 152, lxxix/5; Simon 1991, 286); Bóly–Sziebert puszta A, stray find (Papp 1962, 168, xxviii. b. 1); Csanytelek–Felgyői határút grave 'A' (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289); Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218, c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20); Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kölked–Feketekapu A grave No. 260 (Kiss 1996, 76, Taf. 57/1); Szegvár–Sáppoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18); Vác–Kavicsbánya grave No. 301 (Simon 1991, 310; Tettamanti 2000, Taf. 16/1).
- 272 Kunpeszér–Felsőpeszéri út grave No. 3, 27 and 30/A (H. Tóth 1984, 12; Simon 1991, 299); Törökbálint 36/25 grave No. 1 (Kovrig 1957, 119–120, xvii. t. 1–2. xviii. t. 1, 26. ábra).
- 273 Kölked–Feketekapu B grave No. 106 (Kiss 2001, 43–44, Taf. 32/9); Paks–Gyapa TO33 grave No. 12; Szeged–Fehértó A grave No. 167 (Madaras 1995b, 32, Pl. 19/10); Székkutas–Kápolnádűlő grave No. 541 (Nagy é.n. (2003) 71, 194, kép 1); Tárnok (Garam 1991b, 222, 3. kép, 5. kép 2).
- 274 József Csalog (1959, 105–106) based his interpretations on the sword from Törökbálint with silver hilt and silver ring-pendant, and on the fresco of Bāzāklik from Eastern Turkestan.
- 275 Bóna 1979, 27–28.
- 276 Bóna 1980, 49–51.

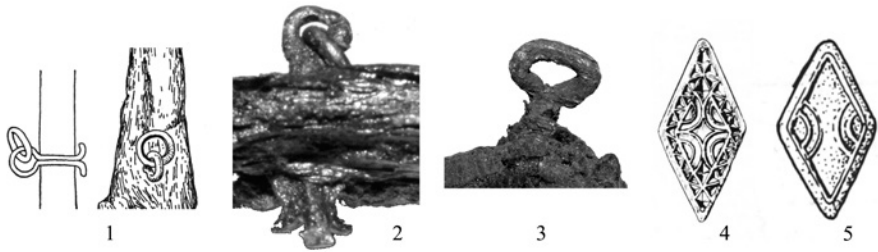


FIGURE 88 Ring-pendants and rhombic rivets: 1. Szegevár–Sáppoldal (Bóna 1979, 5., 8., 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139/140, Taf. 18.); 2. Kölked–Feketekapu A, grave No. 257 (Kiss 1996, 75, Taf. 56/1.); 3. Kölked–Feketekapu A, grave No. 260 (Kiss 1996, 76, Taf. 57/1.); 4. Zsámbok, grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14.); 5. Kölked–Feketekapu A, grave No. 107 (Madaras 1986, 92., 4. ábra (térkép); Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.).

cannot be excluded. Ring-pendants are mostly dated to the Early phase, but some examples are also known from the Middle<sup>277</sup> and Late phases.<sup>278</sup>

#### 2.1.4.2 Rivets with Rhombic Head

Sabre hilts were often decorated with rivets with rhombic heads<sup>279</sup> (fig. 88/4–5) which had already appeared during the last decades of the Early phase as attested by the sword hilt from grave No. 1 at Zsámbok (fig. 88/4), its rivet covered with gold-foil with stamped ornaments,<sup>280</sup> while the hilt from grave No. 8

277 Székkutas–Kápolna-dűlő grave No. 541 (Nagy é.n. (2003) 71, 194. kép 1) iron ring-pendant on sabre hilt.

278 Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4) copper alloy ring-pendant on the hilt of a single-edged sword.

279 Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (I) (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a-d, Taf. 27–28, 35.9; Garam 1994–95, 134, 8. kép); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Kiskőrös–Városalatt grave No. 210 (Horváth 1935, 51, 53); Košice unknown site; Kölked–Feketekapu A grave No. 107 (Madaras 1986, 92, 4. ábra (térkép); Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1); Kunpeszér–Felsőpeszéri út grave No. 8 (H. Tóth 1984, 12; Simon 1991, 299); Ozora–Tótipusztza grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897, II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61, Taf. 62/8); Tiszavárkony–Hugyin-part grave No. 20 (Kiss 1962, 18–19, XIV. t. 2, XXXVII. t. 3; Simon 1991, 308); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14.).

280 Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14.

at Kunpeszér is decorated with a rhombic shaped rivet covered with silver sheet,<sup>281</sup> and the sword hilt from grave No. 107 at Kölked-Feketekapu A cemetery is decorated with a rhombic shaped copper alloy sheet (fig. 88/5).<sup>282</sup> All of these Early phase burials are dated to the middle third of the 7th century.

After the rhombic gold and silver sheets of the Early phase, the Middle and Late phase are characterised by rivets with rhombic head cast of copper alloy<sup>283</sup> or forged of iron.<sup>284</sup> Cast copper alloy rivets could be covered with gold or silver foil<sup>285</sup> or decorated with curved grooves (fig. 89/1).<sup>286</sup> The shape of these rivet-heads is identical, but their technical features represent a degree of chronological order: rhombic rivet-heads covered with gold or silver foils are only characteristic for the Middle phase. Similar rhombic decoration stamped on the silver sheet covering the hilt is also known from a Sassanian sword of the 7th century (fig. 89/2).<sup>287</sup>

Sabre hilts could be decorated with cylindrical rivet-heads on the upper part of the hilt. These rivet-heads cast of copper alloy with grooved decoration are known from the hilts of sabres from burials at Iváncsa<sup>288</sup> and Igar.<sup>289</sup> Cylindrical rivet-heads project from the surface of the hilt but their original function is not known. Both examples are dated to the Middle phase.

Wooden hilts could be decorated with rosettes or rivets with big circular heads. The sabre hilt from grave No. 64 at Gyenesdiás was decorated with three such rivets with big circular heads which included stamped ray-ornament

281 H. Tóth 1984, 12; Simon 1991, 299.

282 Kiss 1996, 41, 232, Taf. 34/1.

283 Košice unknown site.

284 Kiskőrös–Városalatt grave No. 210 (Horváth 1935, 51, 53); Želovce grave No. 820 (Čilinská 1973, 180, Taf. cxxx1/1).

285 Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (1) (Garam 1994–95, 134, 8. kép); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Ozora–Tótipuszta grave No. 1 (Wosinsky 1896, 1000–1008. Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61, Taf. 62/8).

286 Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14).

287 A Sassanian sword with similar decoration was found in the Amlash region (Römisch-Germanisches Zentralmuseum in Mainz) decorated with silver foils. (Böhner – Ellmers – Weidemann 1972, 42; Bálint 1978, 208; Bálint 1992, 317, 416, taf. 12b; Overlaet 1993, 177. No. 35).

288 Bóna 1970, 243, 251. 8/5.

289 Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14.



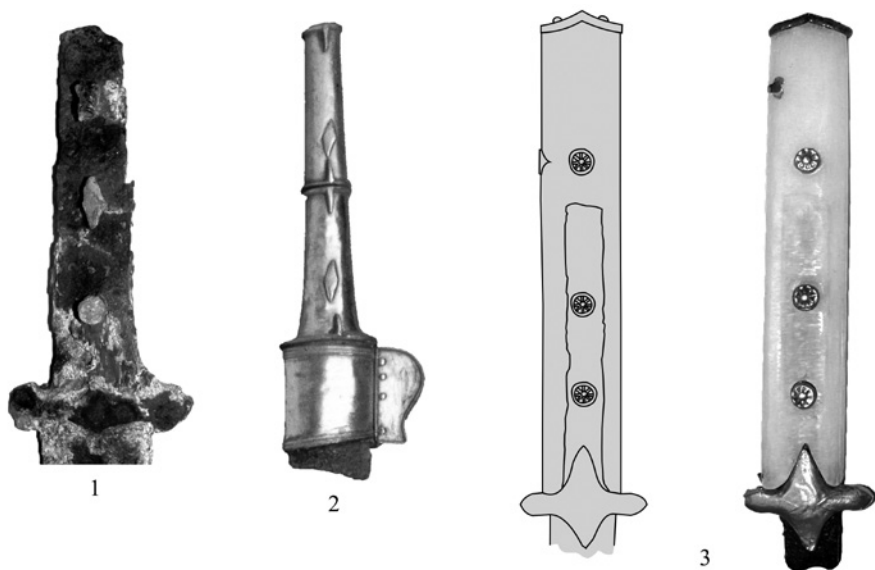


FIGURE 89 *Decorated sword hilts: 1. Košice, Archaeological Institute, unknown site, 2. Sasanian sword (RGZM Inv. No. O. 38822; after Bohner – Ellmers – Weidemann 1972, 42.); 3. Gyenesdiás–Algyenes, Bartók Béla és Hámán Kató utca, grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5).*

(fig. 89/3).<sup>290</sup> Rivets with big circular iron heads decorate the hilt of the sabre from grave No. 14 at Brodski Drenovac<sup>291</sup> and the single-edged sword from grave No. 94 at Košice-Šebastovce.<sup>292</sup>

Besides these rivets, a hilt can also be decorated with various small gold or silver applications, such as the sabre hilt from Gyenesdiás which was decorated with lateral gold foil (fig. 89/3).<sup>293</sup> The various hilt-decorations described above are usually present on edged weapons with star-shaped crossguard covered with gold or silver foil or occasionally on sabres with P-shaped suspension

290 Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5). Similar rivet-heads are known from grave No. 12 at Dunaújváros-Öreghegy. (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a–d, Taf. 27–28, 35,9; Garam 1994–95, 146, 15. kép 4–7).

291 Vinski-Gasparini – Ercegović 1958. 144–145, 156, Tabl. XIV.156.

292 Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský-Krička – očík 1991, 25–26, Taf. XII/7.

293 Müller 1989, Abb. 2, 143–147, Abb. 3–5.



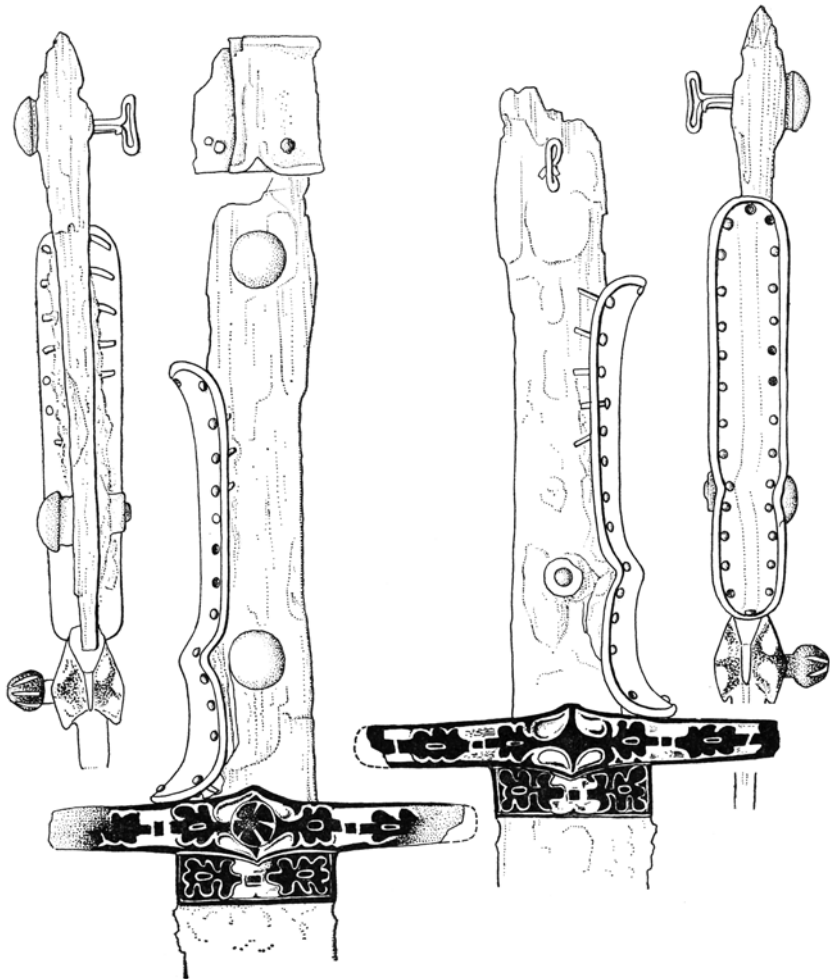


FIGURE 90 *The hilt of the single-edged sword of Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1; Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. xii/7.).*

loops, and was mainly characteristic of the Middle phase, their use disappearing during the Late phase.

#### 2.1.5 Hilt Coverings

A unique form of decoration of the hilt is found on single-edged sword from grave No. 94 at Košice–Šebastovce (fig. 90) which is laterally covered with a finger support made of copper plate. Vojtech Budinský-Krička and Anton Točík

cited Sassanian swords with similar hilts from the 7th century,<sup>294</sup> although the sword from Šebastovce is dated to the 8th century. Finger support is also known from the Eastern European steppes of the 9th–10th century but of a different technique, utilising rivets rather than plate.<sup>295</sup> The hilt of the Šebastovce sword is instead similar to the Sassanian swords, although their hilt was entirely covered with gold foil<sup>296</sup> and there is a considerable chronological and geographical distance between the respective weapons.

Bone coverings of the hilt are extremely rare on Avar-age edged weapons, with only three such examples known.<sup>297</sup> Of note is the hilt covering of the sabre from Berettyóújfalu which was decorated with dot-circle ornament. Bone covering of sabre hilts was much more common on 10th century sabres of the Carpathian Basin.

## 2.2 *The Crossguard*

Crossguards are fixed to the stem of the blade, and they could have served various functions: a crossguard could hinder the slip of the enemy's blade and protect the hand of the edged weapon's user, whereas in other cases it was only used as a stop to hinder the blade damaging the scabbard.

Avar-age crossguards can be classified by their form and manufacture into six major types and several variants. The Early Avar period is characterised by a lack of these crossguards on edged weapons, and therefore very few early examples are known. Crossguards formed of two iron rods (CG.1)<sup>298</sup> were identified by László Simon, which he termed variant 'A/1' (fig. 91/1).<sup>299</sup> Both of the known examples date to the Early phase. Crossguards made of flat oval iron

294 Budinský-Krička – Točík 1984, 174, Obr. 1.

295 From Saltovo cemetery: 1st catacomb of the excavations of 1911 of Babenko (Zakharov – Arendt 1935, 19. 6. kép, III. tábla 1; Merpert 1955, 134. Ris. 1/5), Kuban-region (Ethnographic Museum of Vienna) (Zakharov – Arendt 1935, 50. VI/12. Zagrebínj (Zakharov – Arendt 1935, III. tábla 3), Eshkakon (Kuznetsov – Runich 1974, 196–202; Bálint 1989, 32. Abb. 11). Similar rivets are on the hilt of the sabre from grave No. 11 of Karos II<sup>nd</sup> cemetery (Révész 1996, 180. 241. 19. ábra).

296 Bálint 1978, 173–177; Overlaet 1993, 93; Overlaet 2006, 191–192.

297 Berettyóújfalu–Nagy Bócs dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16), Pókaszepetk–Mesterföldék, Avar utca grave No. 332 (Sós – Salamon 1995, 166–167. Pl. xx); Szeged–Fehértó B cemetery, grave No. 291 (Csallány 1946–48, 352–353; Madaras 1995b, Pl. 5/4–5).

298 Biharkeresztes–Lencsésbát (Mesterházy 1987, 222, 6. kép/1–2); Újfehértó–Tálas dűlő (Bóna 1986b, 80, 90. 292. j; Sipos 1987, 28. 30; Simon 1991, 310).

299 Simon 1991, 274.

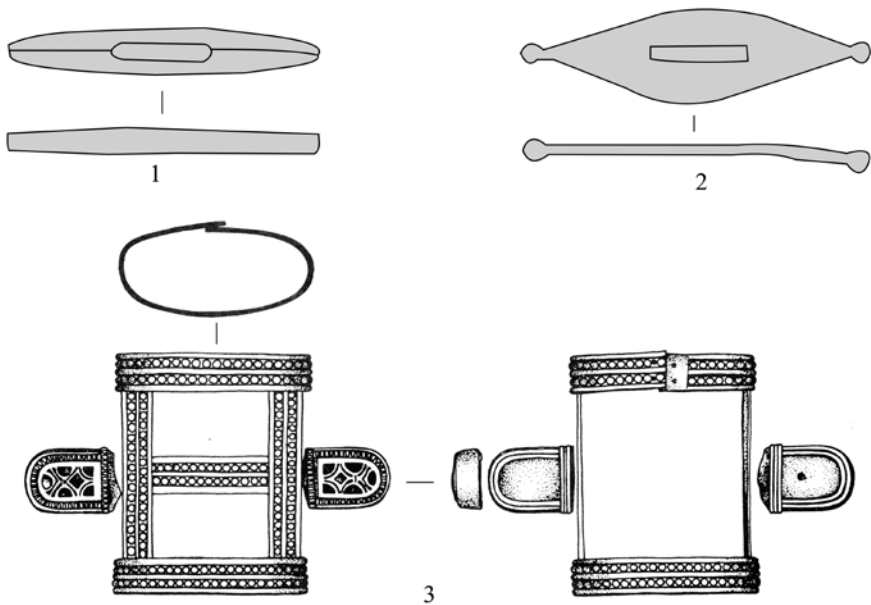


FIGURE 91 *Early Avar crossguards.*

plate (CG.2)<sup>300</sup> were also differentiated by László Simon, and dated to the Early phase, though these were only used on ring-pommel swords (map 41, fig. 91/2).<sup>301</sup>

Small crossguards covered by U-shaped gold or silver sheets (CG.3) are also only known from those ring-pommel swords covered with gold or silver sheets (E.I.C/2.b and E.II.B/2.b) and all of them date to the Early phase (map 41, fig. 91/3).<sup>302</sup> Only the gold or silver covering of this crossguard type survived in

300 Deszk L grave No. 13 (H 22) (Csallány 1939, 137; Csallány 1972, 24–26, Abb. 4, Taf. VI–VII; Trogmayer 1984, 88, 12. lh; Simon 1991, 291, 11. kép 5, 18. kép; Lőrinczy 1994, 114–115); Kiszombor E grave No. 29 (Csallány 1939, 137; Simon 1991, 295 10. kép 5, 19. kép); Sopron, téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304).

301 Variant 'A/2' in the system of László Simon. (Simon 1991, 274).

302 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Csengele–Jójjárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290, 15. kép 8); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra (térkép) 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét, Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37, Simon 1991, 299, 15. kép 1. 22. kép 1; Garam 1992, 137–138, Taf. 4–5); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34,

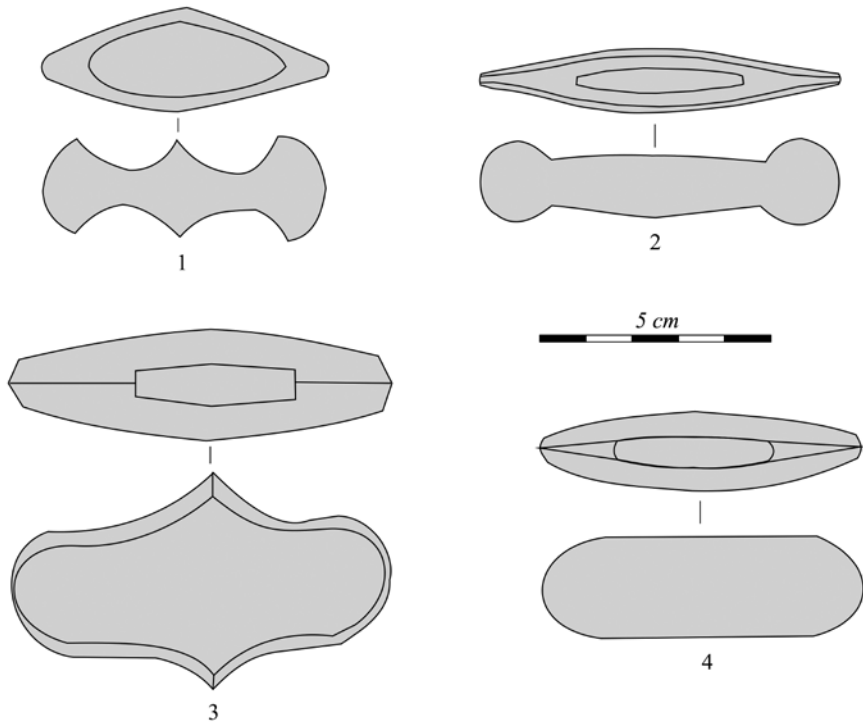


FIGURE 92 *Crossguards of type CG. 4.*

most of the cases. The hilt and part of the blade is covered with gold or silver in the shape of an elliptic-based cylinder framed by bands of pearl-row or ribbed decoration. The ends of the crossguard are covered with U-shaped caps constructed of either silver or gold sheets with glass or stone inlay. This type is only characteristic of ring-pommel swords covered with gold or silver sheets. Most such crossguards were covered with gold<sup>303</sup> but there are some silver coverings

Taf. v–VIII); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); Szegvár–Oromdűlő grave No. 335, 540 and 903; Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2).

303 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230, XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra (térváz) 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992,

as well.<sup>304</sup> Various jeweller's techniques were used on these artefacts: glass and stone inlay,<sup>305</sup> granulation and filigree. All of these crossguards are dated to the second half of the Early phase.<sup>306</sup>

Short crossguards with rounded ends (CG.4, fig. 92) are cast of copper alloy or hammered of iron, and were first identified as Byzantine after the example from Corinth<sup>307</sup> by Attila Kiss who considered similar crossguards cast of copper alloy as also being Byzantine.<sup>308</sup> Following this, Éva Garam also considered similar crossguards to be of Byzantine origin.<sup>309</sup> However, in a more recent study of Avar-age artefacts of Byzantine origin she considered only those crossguards cast of copper alloy to be Byzantine.<sup>310</sup>

Type 'CG.4'<sup>311</sup> was termed 'Byzantine type' by Éva Garam,<sup>312</sup> though this name is problematic for a number of reasons: based on the known analogies for this type the original Byzantine examples were cast of copper alloy and only some (two variants) are formal equivalents of Byzantine crossguards.<sup>313</sup> The copper alloy casting as an attribute for Byzantine origin is questionable, and whilst their extreme scarcity might appear to verify their origin as Byzantine similar iron crossguards are not rare among Avar edged weapons (map 42).

Crossguards cast of copper alloy with rhombic central part and fan-shaped ends (CG.4.a) are only known from double-edged swords of lenticular cross section (fig. 92/1). Only two examples are known from the Carpathian Basin as exact analogies for the Corinthian sword:<sup>314</sup> the swords from grave No. 85

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137–138, Taf. 4–5); Kunszentmiklós–Bábony grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. v–viii); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép).

304 Csengele–Jójárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290, 15. kép 8); Szegvár–Oromdűlő grave No. 335, 540 and 903.

305 Bócsa: garnet inlay with cloisonné-technique (Heinrich-Tamáška 2006a, 98–99, for the technique: Heinrich-Tamáška 2006a, 30–31); Kunbábony: green glass inlay (Heinrich-Tamáška 2006a, 144–145); Nagykőrös: green glass inlay (Heinrich-Tamáška 2006a, 152–153).

306 For crossguards type 1–3 see map 40, fig. 92.

307 Davidson-Weinberg 1974, 520.

308 Kiss 1987a, 194–210.

309 Garam 1991a, 142.

310 Garam 2001, 158–159.

311 For their list see map 41, fig. 93.

312 Garam 1991a, 142–143.

313 Aradac–Mečka grave No. 85 (Nađ 1959, 62, Tab. xxvii/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196, Abb. 2, 203–204); Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57).

314 Davidson-Weinberg 1974, 520.

at Aradac-Mečka<sup>315</sup> and from grave No. 259 at Kölked-Feketekapu A.<sup>316</sup> These crossguards are probably the predecessors of short crossguards with rounded ends and star-shaped crossguards discussed by Éva Garam.<sup>317</sup>

Short, narrow crossguards with rounded ends (CG.4.b) are only known from burial No. x at Tarnaméra–Urak dűlő, the crossguard of this single-edged sword with false edge being cast of copper alloy covered by silver foil (fig. 92/2). Its length is 7.88 cm and is boat-shaped in plan.<sup>318</sup> Its closest analogy was found in the 2nd grave at Öskü and was forged of iron.<sup>319</sup> Similar crossguards made of iron are also known from Northeastern Bulgaria.<sup>320</sup> The sword from Tarnaméra was dated to the second half of the Early phase by both János Győző Szabó<sup>321</sup> and Éva Garam.<sup>322</sup>

### 2.2.1 Short Crossguards with a Rhombic Central Part and Rounded Ends (CG.4.c)<sup>323</sup>

This variant is the predecessor of the star-shaped crossguards, also with rhombic central part. The iron crossguard is often decorated with gold<sup>324</sup> or copper alloy sheet<sup>325</sup> which was the usual decorative style of the Middle Avar phase (fig. 92/3). Such crossguards were mainly used on sabres with slightly curved blade. The example from Székesfehérvár was cited by Garam as probably being a modern fake on the basis of both its extremely good preservation and shape.<sup>326</sup> All of the cited edged weapons are found in burials dating to the Middle phase.

A simple variant of this type is represented by the short, narrow crossguards with rounded ends (CG.4.d)<sup>327</sup> which comprise a late, transitional variant of

315 Aradac–Mečka grave No. 85 (Nađ 1959, 62, Tab. xxvii/1).

316 Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57).

317 Garam 1991a, 159.

318 Szabó 1965, 42, VIII. t. 1–3; Simon 1991, 307, II. kép 2.

319 Rhé – Fettich 1931, 42–43.

320 Valeri Jotov (2004, 65, Tabl. xxxvii) listed 8 such crossguards from the following sites: Veliki Preslav, Izvorovo fort, Dorbich, Senovo and Stärmén.

321 It is dated between 620 and 650 by stamped belt-set (Szabó 1965, 42).

322 Éva Garam (2001, 144, 159) dated the strap-end of Tarnaméra type to the middle of the 7th century.

323 Kiskassa–Téglaház (Hampel 1897, 144; CXLVII; Hampel 1905, III. Taf. 276); Kiskunfélegyháza–Pákapuszta (László 1955, 236, LXIX. t. 23; Simon 1991, 295; Garam 1991a, 143–144, 10. kép; Balogh 2002, 307); Tiszaeszlár–Sinkahegy (Csallány 1960a, 33, XVI. t. 4).

324 Kiskunfélegyháza–Pákapuszta (László 1955, 236, LXIX. t. 23; Simon 1991, 295; Garam 1991a, 143–144, 10. kép; Balogh 2002, 307).

325 Kiskassa–Téglaház (Hampel 1897, 144, CXLVII; Hampel 1905, III. Taf. 276).

326 Hampel 1900, 111–112; Garam 1991a, 144–145, 10. Kép.

327 Babarc–Halastó grave No. 3 (Kiss 1977, II, Pl. LXI.A/1; Kiss 1979a, 394); Bóly–Sziebert puszta A, stray find (Papp 1962, 168, xxviii.b.2); Tiszafüred–Majoros grave No. 379 (Garam 1995,

the type, and are dated to the end of the 7th and the beginning of the 8th century (fig. 92/4).<sup>328</sup>

### 2.2.2 Star-shaped Crossguards (CG.5)

Star-shaped crossguards are characterised by a central rhombic part and short projections,<sup>329</sup> and therefore could not have been used for fencing, since the crossguard was too short to stop the enemy's blade (maps 42–43, fig. 93). Its function was probably to hinder the blade when placed into the scabbard, similar to Ottoman sabre crossguards. The lower projection runs into the scabbard, and was of particular importance when pulling out the blade.<sup>330</sup> These crossguards were called star-shaped by Éva Garam,<sup>331</sup> whereas previously they had been called rhombic.

Some of the star-shaped crossguards are covered with gold or silver sheets (CG.5.a, fig. 93/1).<sup>332</sup> Other decorative schemes are also known, such as the oval

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52, Taf. 177/1); Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63, Taf. 7/2); Želovce grave No. 27 (Čilinská 1973, 38, Taf. IV/1); Želovce grave No. 175 (Čilinská 1973, 67, Taf. XXXI/1); Želovce grave No. 843 (Čilinská 1973, 183, Taf. CXXXIII/17).

328 Éva Garam (1991a, 143) classified the grave No. 4 at Košice-Barca to this form (Pástor 1954, 137, Tab. 1/1), though this attribution is questionable.

329 Their average length is 5–6 cm, but examples from the Late phase are usually 8–10 cm long.

330 A similar function is known from the crossguards (tsuba) of samurai swords (katana) (Icke-Schwalbe 2006, 92).

331 Garam 1991a, 148.

332 Éva Garam referenced more sabres of this type than are actually known as a result of problems with identification: the sword cited from grave No. 125 at Jánoshida is identical to that from 'Csanád' mentioned by Géza Nagy (1901b, 285), and József Hampel (1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110) identified it with the sword from Baracs by István Bóna. In the publication of the Jánoshida cemetery the photograph of the former sword is published (Erdélyi 1958, 25, XLIV. t. 1). All other edged weapons from the site disappeared during World War II, but János Kalmár made descriptions and drawings of these weapons between 1930 and 1939 in the Weapon Depository, and according to his drawing and descriptions the sword from Jánoshida did not have silver covering. The crossguard of the sabre from Kecskemét-Miklóstelep cannot be regarded as having silver covering, since it was published with a silver quadrangular belt-mount on its crossguard (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905, II. 379–380. III. Taf. 277). The crossguard of the sabre from grave No. 820 from Želovce (Čilinská 1973, 180, Taf. CXXXI/1) is not covered by silver foil either. These weapons are: Baracs-Ágocs-tanya (Nagy 1901b, 285, Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110); Dunaújváros-Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (1) (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a-d, Taf. 27–28, 35, 9; Garam 1994–95, 134, 8. kép); Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5);



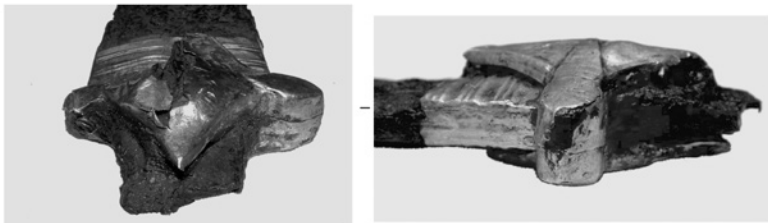
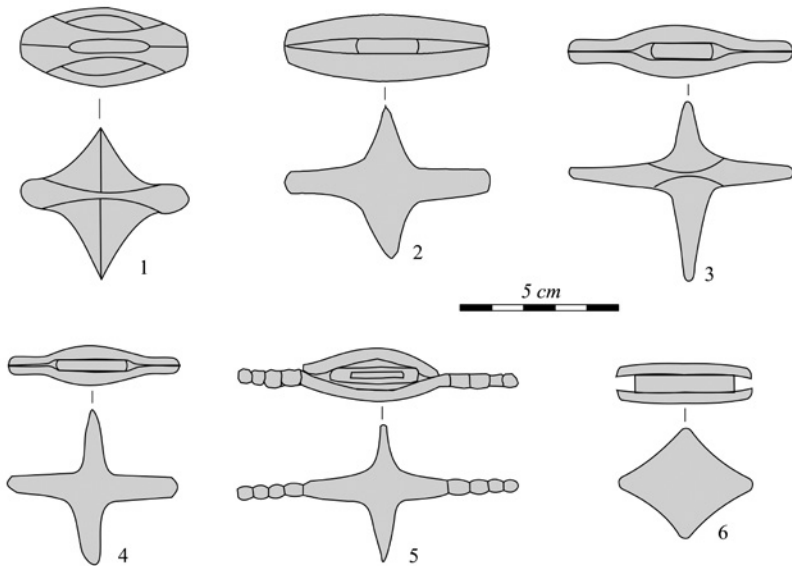


FIGURE 93 Crossguards of type CG.5 and the structure of crossguard type CG.5.a: Baracs-Ágocs-tanya (Nagy 1901b, 285; Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, No. 244; Bóna 1982–83, 110–111.).

field on the sabre of Ozora-Tótipusztza,<sup>333</sup> the spherical end on the crossguard from grave No. 7 at Dunaújváros-Öreghegy,<sup>334</sup> the triangular grooves divid-

- Igar-Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Kehidakustyán–Kehida, Központi Tsz-major grave No. 61 (Szóke 2002, 75, 11); Ozora-Tótipusztza grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905, III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61, Taf. 62/8); Wien XXIII–Liesing grave No. I (Mossler 1948, 220).
- 333 Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897, II. LV–LVII. táblák; Hampel 1905, III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61, Taf. 62/8.
- 334 Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a–d, Taf. 27–28, 35.9; Garam 1994–95, 134, 8. kép.



ing the central rhombic field from the ends from grave No. 64 at Gyenesdiás,<sup>335</sup> and the curved grooves on the crossguard of Baracs.<sup>336</sup> The concave sided sabre crossguard from the IIIrd find at Igar is covered with gold sheets.<sup>337</sup> The sabre from grave No. 1 at Wien–Liesing is covered with gilded silver sheet, but its shape is different from the usual short, star-shaped examples.<sup>338</sup>

The crossguard from grave No. 7 at Dunaújváros is of a different shape,<sup>339</sup> and is similar to the crossguard from grave No. x at Tarnaméra–Urak dűlő,<sup>340</sup> although the example of Dunaújváros ends in spherical parts, while the example from Tarnaméra terminates in discs.

Most of the gold or silver coverings are box-shaped and made of two parts which is particularly well represented on the examples from Gyenesdiás<sup>341</sup> and Baracs.<sup>342</sup> These crossguards are usually broad and oval in plan.

Although it is not part of the crossguard, functionally the spacers underneath also belong to them, for two reasons: they prevent the slipping of the crossguard and, they were used as supporters for the thumb, which also prevented it being cut by the blade (fig. 93/7). This part is usually made of iron, however, the sabres with crossguards covered with gold or silver sheets were usually equipped with ribbed gold or silver foil spacers.<sup>343</sup> The width of these ribbed spacers is between 1.5 and 2 cm.<sup>344</sup>

Star-shaped crossguards with gold or silver covering are only known from the Middle phase. The metal sheet covering is only a decorative element without any function. Its antecedents were already known during the end of the Early

335 Müller 1989, Abb. 2, 143–147, Abb. 3–5.

336 Nagy 1901b, 285, Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110.

337 Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14.

338 Mossler 1948, 220.

339 Garam 1994–95, 134, 8. kép.

340 Szabó 1965, 42, VIII. t. 1–3; Simon 1991, 307, II. kép 2.

341 Müller 1989, Abb. 2, 143–147, Abb. 3–5.

342 Nagy 1901b, 285, Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110.

343 These spacers have been erroneously described as lockets in some studies, despite the fact that they are located on the blade directly under the crossguard.

344 Baracs–Ágocs-tanya (Nagy 1901b, 285, Hampel 1905. I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110); Dunaújváros–Öreghegy, Rákits D. földje (Dunapentele) grave No. 7 (I) (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a–d, Taf. 27–28, 35–9; Garam 1994–95, 134, 8. kép); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Ozora–Tótipusztá grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II, LV–LVII. táblák; Hampel 1905. III, Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61, Taf. 62/8); Wien XXIII–Liesing grave No. I (Mossler 1948, 220).

phase, such as the cast copper alloy crossguard from grave x at Tarnaméra–Urak-dűlő which is covered with silver sheet,<sup>345</sup> and the crossguards of the sabres from Kiskunfélegyháza–Pákapusztá<sup>346</sup> and Kiskassa<sup>347</sup> which have gold and copper foil. Gold or silver coverings were also known from contemporary Eastern Europe on local short rhombic crossguards.<sup>348</sup>

All known crossguards of this type are dated to the Middle phase. The gold or silver covering were not especially robust and therefore they can be regarded as ostentatious weapons, all of which were found in elite male burials, suggesting they probably had a particular social significance.<sup>349</sup> Some of these crossguards were also found on strongly curved blades.<sup>350</sup>

All of the known star-shaped crossguards with gold or silver covering were found in Transdanubia, five of the six pieces from the eastern part of Transdanubia (Fejér county), while the sabres from Gyenesdiás<sup>351</sup> and Kehida<sup>352</sup> are from western Transdanubia (Zala county). According to some theories the concentration of this type in eastern Transdanubia suggests a local centre of power,<sup>353</sup> however, this has not been proved by other classes of data.

### 2.2.3 Regular Star-shaped Crossguards Made of Iron (CG.5.b)

These crossguards are usually short, with a regular rhombic central part and with rounded ends placed over an iron spacer, their shape being oval in plan. Their length is usually around 6 cm, their width around 4 cm (map 43, fig. 93/2).

Nineteen examples of this variant are known, their shape being identical to those crossguards covered with gold or silver sheets. Such crossguards are

345 Szabó 1965, VIII. t. 1.

346 László 1955, 236, LXIX. t. 23; Simon 1991, 295; Garam 1991a, 143–144, 10. kép; Balogh 2002, 307.

347 Hampel 1897, 144; CXLVII; Hampel 1905, III, Taf. 276.

348 The crossguards of Voznesenka (Smilenko 1965, 107, Ris. 38; Bálint 1989, 94) and Jasinova (Pósta 1905, 266–270; Erdélyi 1982, 37, 12. kép) are dated to the second half of the 7th century (Komar 2006, 124).

349 Bóna 1971a, 247–248; Bóna 1984a, 325.

350 Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5); Igar–Vámszőlőhegy, Petőfi u. 56. grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14); Kehidakustyán–Kehida, Központi Tsz-major grave No. 61 (Szóke 2002, 75, 11).

351 Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5).

352 Kehidakustyán–Kehida, Központi Tsz-major grave No. 61 (Szóke 2002, 75, 11).

353 Bóna 1971a, 247–248 (31–32); Bóna 1984a, 325).

equipped not only on sabres<sup>354</sup> but also on single-edged swords.<sup>355</sup> Most of these crossguards are dated to the Middle Phase<sup>356</sup> but are also still relatively common during the first half of the 8th century,<sup>357</sup> and a small number are even known from the second half of the 8th century.<sup>358</sup> Their geographical distribution is even throughout the Carpathian Basin.

Elongated star-shaped crossguards (of iron) (CG.5.c)<sup>359</sup> are longer, with ends that taper, the sides being concave and the central part rather narrow (fig. 93/3). These crossguards are often decorated, such as the horizontal grooves on the crossguard from grave No. 8 at Bányog–Gyűrhegy,<sup>360</sup> or the silver inlay in vertical lines on the sabre crossguard at Szeged–Átokháza.<sup>361</sup> Such crossguards are also known from slightly curved sabre blades<sup>362</sup> and single-edged swords.<sup>363</sup> This variant was used during both the Middle phase<sup>364</sup> and beginning of the Late phase.<sup>365</sup>

Cross-shaped crossguards (of iron) (CG.5.d)<sup>366</sup> are angular, the ends are straight and tapering, the central part is narrow like a pike and is not decorated

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354 Most of these crossguards were found on curved blades (14 pieces, 70%).

355 Only seven such crossguards (30%) have been found on single-edged swords.

356 Eight pieces (42%) are dated to the Middle phase (see list).

357 Six pieces (30%) are dated to the first half of the 8th century.

358 These crossguards are dated according to the cast strap-ends decorated by flat circular tendrils (Pástor 1961, 378–379, 362, Obr. 153).

359 Apatin–Dunavska u. (Dimitrijević – Kovačević – Vinski 1962, 34, Abb. 4; Mrkobrad 1980, 98, 155, CXXXVIII/5); Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Szeged–Átokháza (Csallány 1946–48, 350–352); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1).

360 Lovas 1929b, 255–257; Fettich 1943, 7.

361 Csallány 1946–48, 350–352.

362 Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Szeged–Átokháza (Csallány 1946–48, 350–352); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1).

363 Apatin–Dunavska u. (Dimitrijević – Kovačević – Vinski 1962, 34, Abb. 4; Mrkobrad 1980, 98, 155, CXXXVIII/5).

364 Bányog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7); Szeged–Átokháza (Csallány 1946–48, 350–352).

365 Apatin–Dunavska u. (Dimitrijević – Kovačević – Vinski 1962, 34, Abb. 4; Mrkobrad 1980, 98, 155, CXXXVIII/5); Želovce grave No. 335 (Čilinská 1973, 97, LVII/1).

366 Aiudul de Sus (Horedt 1956, 396; Horedt 1958a, 93, fig. 17/3; Horedt 1968, 71; Bóna 1986a, 116; Bóna 1989, 88; Cosma et al. 2013, 60, fig. 31); Čataj I. – Zemanské-Gejzove grave No. 60 (Hanuliak – Zábójník 1982, 498; Zábójník 1995, No. 17, Abb. 4); Kisköre–Halastó grave No. 32 (Garam 1979, 13–15, Taf. 9, Taf. 29/3); Komárno–8 Shipyard grave No. 30 (Trugly 1987, 256, Abb. 3; Taf. v/6); Komárno–8 Shipyard grave No. 71 (Trugly 1987, 265, Taf. xv/15); Komárno–8 Shipyard grave No. 72 (Trugly 1987, 265–266, Taf. xvi/17); Želovce grave No.

(map 44, fig. 93/4). This type is mainly used on single-edged swords<sup>367</sup> but is also known from curved sabres.<sup>368</sup> The variant is dated to the first half of the Late phase.<sup>369</sup>

Long star-shaped crossguards with inlay decoration (CG.5.e)<sup>370</sup> are characterised by a circular cross section, the ends of the crossguard are decorated with pearl-rows with a wide rhombic central part (map 44, fig. 93/5). These crossguards are often decorated with silver inlay, and they are characteristic of single-edged swords,<sup>371</sup> and all of them are dated to the Late phase.

Rhombic crossguards (CG.5.f)<sup>372</sup> are of regular rhombic shape, are mostly shorter than the width of the blade, and were probably used as scabbard stops (map 44, fig. 93/6).<sup>373</sup> This crossguard variant is used on both single-edged

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- 1 (Čilinská 1973, 34, Taf. 1/1.); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21.); Želovce grave No. 167 (Čilinská 1973, 65, Taf. XXIX/1); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26).
- 367 Six examples: Aiudul de Sus (Horedt 1956, 396; Horedt 1958a, 93, fig. 17/3; Horedt 1968, 71; Bóna 1986a, 116; Bóna 1989, 88; Cosma et al. 2013, 60, fig. 31); Čataj 1.–Zemanské-Gejzove grave No. 60 (Hanuliak – Zábójník 1982, 498; Zábójník 1995, No. 17, Abb. 4); Kisköre–Halastó grave No. 32 (Garam 1979, 13–15, Taf. 9, Taf. 29/3); Komárno–8 Shipyard grave No. 30 (Trugly 1987, 256, Abb. 3, Taf. v/6); Komárno–8 Shipyard grave No. 71 (Trugly 1987, 265, Taf. xv/15); Komárno–8 Shipyard grave No. 72 (Trugly 1987, 265–266, Taf. xv/17); Želovce grave No. 167 (Čilinská 1973, 65, Taf. XXIX/1).
- 368 All of the three sabres with similar crossguard were found in Želovce: grave No. 1 (Čilinská 1973, 34, Taf. 1/1); grave No. 44 (Čilinská 1973, 42, Taf. VIII/21); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26).
- 369 Every examples are dated to the first half of the 8th century except for two pieces, which are dated to the Middle phase: Kisköre–Halastó grave No. 32 (Garam 1979, 13–15, Taf. 9, Taf. 29/3); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26).
- 370 Bratislava–Čunovo grave No. 54 (Hampel 1905, II. 148, 150; III. Taf. 126; Fettich 1927, v/1); Brodski Drenovac–Plana grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV); Leobersdorf–Ziegelei Polsterer grave No. 71 (Daim 1987, 241, Taf. 68/3); Valalíky–Všechsvätých grave No. 85/83; Zalakomár–Lesvári dúlló grave No. 135 (Szóke 2002, 80, 14); Zalakomár–Lesvári dúlló grave No. 210.
- 371 The only exception is the slightly curved sabre of Brodski Drenovac–Plana from grave No. 14 (Vinski-Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV.156).
- 372 Bóly–Sziebert puszta A, stray find (Papp 1962, 168, XXVIII. b. 1); Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1); Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8); Pókaszepetk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. XXVII); Tiszafüred–Majoros grave No. 946 (Garam 1995, 112, Abb. 45, Taf. 186); Zillingtal grave No. D-330 (Mehofer 2006, 162, Abb. C).
- 373 Narrow and high crossguards compose a distinct group: their width being less than the width of the blade: Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8);

swords<sup>374</sup> and curved sabres.<sup>375</sup> Most of these weapons are dated to the Middle phase except for the example from grave No. 107 at Komárno–Shipyard which belongs to the beginning of the 8th century.<sup>376</sup>

#### 2.2.4 Long, Narrow Crossguards (CG.6)

This type was termed the ‘Late-Saltovo type’ by Éva Garam,<sup>377</sup> since similar crossguards are known from burials of the Saltovo-Majaki culture and from the Saltovo cemetery itself.<sup>378</sup> The Late Saltovo term will not be used, however, because this term describes the direction of influence and not the shape of the crossguard itself.<sup>379</sup> Although one of the main attributes used by Garam was the fixing of these crossguards by means of rivets, it is not usual for this type.

The crossguards of this type are usually long (8–10 cm), they are rod-like and straight, they could also be used for fencing. These crossguards are often decorated with silver inlay (map 45, fig. 94). Edged weapons with such crossguards can be straight or slightly curved.<sup>380</sup>

Long, narrow crossguards fixed by a rivet (CG.6.a)<sup>381</sup> are usually 8–10 cm long (fig. 94/1, 3). The crossguard of the single-edged sword from grave No. 94 at Košice–Šebastovce is an outstanding example with its silver inlay decoration

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Pókaszepetk–Mesterföldék, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. xxvii); Tiszafüred–Majoros grave No. 946 (Garam 1995, 112, Abb. 45, Taf. 186).

374 Bóly–Sziebert puszta A, stray find (Papp 1962, 168, xxviii. b. 1); Tiszafüred–Majoros grave No. 946 (Garam 1995, 112, Abb. 45, Taf. 186).

375 Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1); Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. xiii/8); Pókaszepetk–Mesterföldék, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. xxvii); Zillingtal grave No. D-330 (Mehofer 2006, 162, Abb. C).

376 Trugly 1993, 196–197, Taf. xiii.

377 Garam 1991a, 153.

378 These sabres were first cited by Zakharov – Arendt 1935.

379 It is not clear why Garam used the term ‘Late’ for these sabre crossguards, which are usually dated to the early phase of the Saltovo culture (second half of the 8th century–9th century), and which were substituted by shorter and curved crossguards characteristic for early Hungarian sabres during the 10th century.

380 This feature is already mentioned by Éva Garam (1991a, 155).

381 Brodski Drenovac–Plana grave No. 19 (Vinski–Gasparini – Ercegović 1958, 144–145, 157, Tabl. xv/4); Košice–Šebastovce grave No. 94 (Budinský–Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský–Krička – Točík 1991, 25–26, Taf. xii/7); Zalakomár–Lesvári dűlő grave No. 505 (Szóke 2002, 80, 13); Želovce grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1).

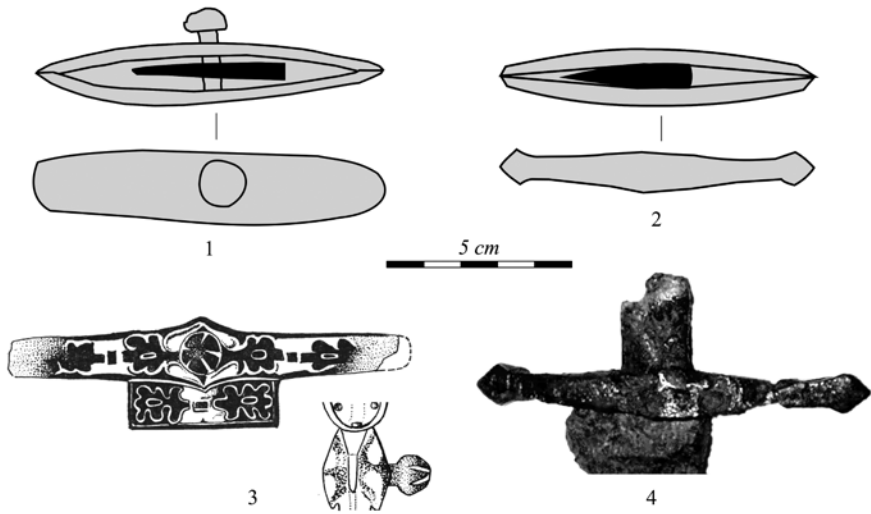


FIGURE 94 Crossguards of type CG.6: 1. Košice–Šebastovce, grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.); 2. Budapest x. Rákos, Ejtőernyőstorony, grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b.).

(fig. 94/3).<sup>382</sup> The type is only used for straight single-edged sword-blades.<sup>383</sup> This type is used during the Late phase, as demonstrated by the example from Šebastovce which is dated to the first half of the 8th century,<sup>384</sup> while the other examples are dated to the second half or end of the 8th century.

Long, narrow crossguards without fixing rivets (CG.6.b) are made of two iron rods fixed to the blade opposite to one another (fig. 94/2, 4).<sup>385</sup> Their length

382 Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5.

383 The only exception is the sabre with slightly curved blade from grave No. 175 of Želovce (Čilinská 1973, 67, Taf. xxxi/1).

384 Budinský-Krička – Točík 1984, 174, Obr. 1, Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. XII/7.

385 Bóly–Sziebert puszta A grave No. 20 (Papp 1962, 174–175, XXVIII. t. 3); Budapest x. Rákos, Ejtőernyőstorony grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b); Holiare grave No. K11 (Kovrig 1948, 120–121; Zábójník 1995, 284); Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15); Komárno–8 Shipyard grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/13); Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4); Košice–Barca grave No. 4 (Pástor 1954, 137, Tab. I./1); Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47, Taf. XXVIII/17); Košice–Šebastovce grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. XXXVI–XXXVIII); Romonya I. grave No. 41 (Kiss 1977, 112–113, Pl. XLVII/10);

is between 8 and 10 cm. These crossguards were fixed asymmetrically to the blade. The crossguard of the single-edged sword from grave No. 1 at Budapest-Rákos (Fig. 94/4) is 8.6 cm long, of rectangular cross section, and is decorated by vertical grooves and terminates in rhombic-shaped parts.<sup>386</sup> These crossguards are also known from straight single-edged and curved blades. This type is dated to the Late phase, spanning its entire duration.<sup>387</sup>

#### 2.2.5 Hilt-tube Crossguards (CG.7)

This type is characterised by a tube on the hilt with two horizontal projections. Such crossguards were cast of copper alloy<sup>388</sup> and have been identified as Byzantine imports (map 46, fig. 95).<sup>389</sup> The sword from Čierný Brod (fig. 95/1) was considered to be a Byzantine import of the Late phase and dated to the end of the 8th and to the beginning of the 9th century by Attila Kiss.<sup>390</sup> A good analogy for this weapon is known from the Carolingian cemetery at Garabonc (fig. 95/2).<sup>391</sup> A similar crossguard forged of iron was found on a sabre in grave No. 230 at Košice-Šebastovce.<sup>392</sup> Although this crossguard is unique in the Carpathian Basin, similar crossguards are well known in Bulgaria.<sup>393</sup> This edged weapon can be regarded as an indicator of southeastern contact.<sup>394</sup>

#### 2.2.6 Short, Broad Spatha Crossguard (CG.8)<sup>395</sup>

Crossguards were generally used on spathae from the 8th century onwards. These crossguards are relatively short, broad, their ends are rounded and are

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Vösendorf grave No. 715 (Sauer 2007, 94–95); Želovce grave No. 27 (Čilinská 1973, 38, Taf. 1v/1); Želovce grave Nr 79 (Čilinská 1973, 49, Taf. xv/1).

386 Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a–b.

387 The only exception is grave No. 11 from Holiare, which is dated by the quadrangular silver mounts, which are characteristic of the Middle phase (Kovrig 1948, 120–121).

388 Čierny Brod I. grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábajník 1995, No. 19); Garaboc–Ófalu I grave No. 55 (Szóke 1992a, 93).

389 Kiss 1987a, 204–205.

390 Kiss 1987a, 204–205, Abb. 5.

391 Szóke 1992a, 92–96. 233–234. Taf. 20. He dated the burial to the second third of 9th century (Szóke 1992a, 96).

392 Košice–Šebastovce grave No. 230 (Budinský-Krička – Točík 1991, 49, Taf. xxxi/8).

393 Crossguards with hilt-tube cast of copper alloy: Galovo–Vračansko, Pliska and from an unknown site of northeastern Bulgaria (Iotov 2004, Tabl. xxix), made of iron: Abritus near Razgrad, Červen brjag, the fort of Stărmen, Rusensko, Staro Selo, Vračansko, Dobrič (Iotov 2004, Tabl. xxxvi).

394 Csiky 2006, 114.

395 Wien–xxiii. Liesing grave No. 3 (Mossler 1948, 222) Želovce grave No. 124 (Čilinská 1973, 57, Taf. xxii/16), see map 46, fig. 98 96.



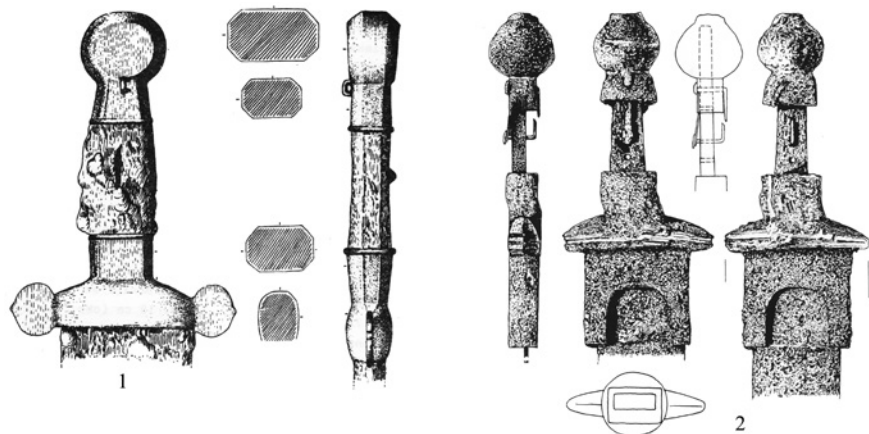


FIGURE 95 Crossguards of type CG.7: 1. Čierny Brod I. – Homokdomb, grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábajník 1995, No. 19.); 2. Garabonc I. Grave No. 55 (Szőke 1992a, 504, Taf. 20.).

oval in plan (map 47). This crossguard type is typical for the 5th combination type of Alfred Geibig<sup>396</sup> which is dated to the second half of the 8th century.<sup>397</sup> The long, straight and narrow crossguard of Petersen's x type sword, found as a stray find in the Brodski Drenovac cemetery,<sup>398</sup> is clearly different from the above-mentioned example. This sword is clearly dated to the 10th century therefore this stray find probably did not belong to the cemetery from the 8th century.<sup>399</sup>

### 2.3 *Decoration of the Scabbard*

Scabbards are usually decorated with gold, silver or copper alloy coverings made of thin metal sheets. These coverings are often framed by bands of pearl-row or ribbed decoration (Fig. 96/1–2). Such coverings were located about the locket and chape, and on the lower suspension loop.

396 5. Parierstangenaufsicht (Geibig 1991, 37).

397 Geibig 1991, 151, Abb. 39.

398 Vinski-Gasparini – Ercegović 1958, 144–145, 157. Tabl. xv/8.

399 The spatha of Brodsky Drenovac of x type has just such a crossguard, and is dated to the 10th century. This sword is of the II variant of the 12th combination type of Geibig (1991, 151).



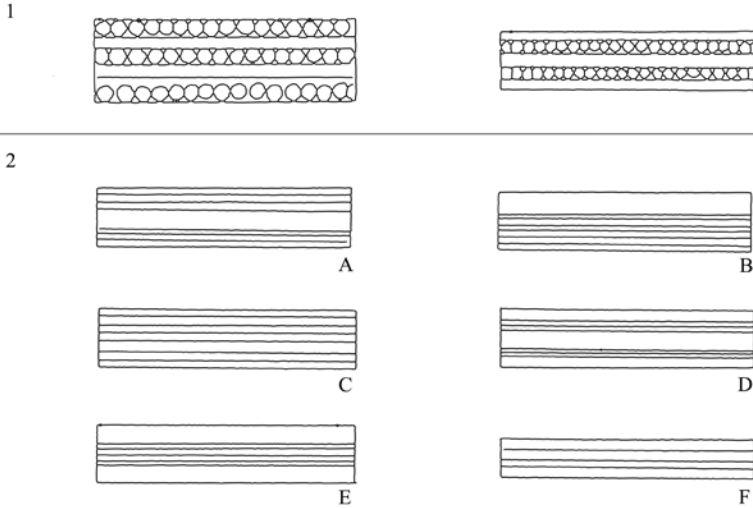


FIGURE 96/1–2 Decorations of frame-bands used on sword scabbards (after Simon 1991, 12. kép).

### 2.3.1 Ribbed Frame-bands

This decoration is widely used, and can be stamped or cast (fig. 96/2). Five variants of ribbed decoration are known and have been described by László Simon:

- A type: the band is even along its central part and the two sides are ribbed<sup>400</sup>
- B type: one third of the band is even or decorated by a single broad rib, while the rest of it is ribbed<sup>401</sup>
- C type: the whole surface is ribbed<sup>402</sup>

400 Környe grave No. 75 (Salamon – Erdélyi 1971, 20, Taf. 10, Taf. 32/1; Simon 1991, 296); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15); Zsámbok grave No. 2 (Garam 1983, 144, Abb. 5/7; 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7).

401 Csengele–Jójárta grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290, 15. kép 8); Szegvár–Sárpoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18); Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, II. kép 7, 14. kép 5, 15. kép 9, 22. kép 2).

402 Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10, kép; Simon 1991, 290, 14. kép 6; 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195); Mór–Akasztódomb grave No. 25 (Török

- D type: the central part of the band is flat and surrounded by ribbed surfaces, while the edges are flat<sup>403</sup>
- E type: the band is centrally ribbed and framed by flat parts<sup>404</sup>
- F type: a narrow band wholly covered by a ribbed surface<sup>405</sup>

These ribbed decorative types can also appear combined on a single weapon, such as in the combination of C and F types on two particular swords,<sup>406</sup> and the combination of type D and E on two other weapons.<sup>407</sup> Only type B does not occur combined with any of the other types, which means that there were

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- 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302); Törökbálint 36/25. site, grave No. 1 (Kovrig 1957, 119–120, XVII. T. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8).
- 403 Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50, Abb. 9, B, 2; Mrkobrad 1980, 98, 152, LXXIX/7; Simon 1991, 289); Csanytelek–Felgyői határút grave 'A' (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lőrinczy – Szalontai 1993, 282, Taf. VII); Deszk G grave No. 8 (Csallány 1939, 127, 129, I. t. 2–2a, 2. kép 2–2a; Simon 1991, 291; 16. kép 6; Lőrinczy 1994, 113–114); Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218, c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20); Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15); Törökbálint 36/25. site, grave No. 2 (Kovrig 1957, 120, XIX. t. 27–29; MRT 7. 347–348; Simon 1991, 310).
- 404 Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15).
- 405 Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6, 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195); Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Mandelos (Ercegović – Pavlović 1973–74, 108, fig. 1, I. t. 1; Pl. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10); Törökbálint 36/25. site, grave No. 1 (Kovrig 1957, 119–120, XVII. T. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8).
- 406 Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6, 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195); Törökbálint 36/25. site, grave No. 1 (Kovrig 1957, 119–120, XVII. T. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8) Both swords were double-edged.
- 407 Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15) The decoration of the sword of Kunmadaras is combined with type A also.

two combinations that never occur together on a single weapon according to current knowledge.<sup>408</sup>

### 2.3.2 Frame-bands with Pearl-row Decoration<sup>409</sup>

Frame-bands with double or triple pearl-row decoration are often used for decorating sword scabbards (fig. 96/1).<sup>410</sup> This decoration type is not identical with granulation or pearl-wire but was rendered by two different techniques: cast<sup>411</sup> and stamped.<sup>412</sup> This decoration is mainly characteristic of ring-

408 These differences can be of chronological significance or it can be the result of different regional workshops.

409 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Budapest XXI. Csepel–Kavicsbánya (Fettich 1926b, 2, Pl. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180); Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Csengőd–Páhipuszta, Kenyérvágóhalom (Bolevár–Páterhalom, Pivarcsi János földje) (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét, Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kunpeszér–Felsőpeszéri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299); Kunpeszér–Felsőpeszéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. v–VIII); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép és II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14).

410 This decoration is described by László Simon (1983, 30–32) in detail.

411 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Csengőd–Páhipuszta, Kenyérvágóhalom (Bolevár–Páterhalom, Pivarcsi János földje) (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; SÓS 1961, Abb. 21; Horváth 1990, 40); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra 173. lh.; Simon 1991, 294, 15. kép 2); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. v–VIII); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép).

412 Budapest XXI. Csepel – Kavicsbánya (Fettich 1926b, 2, Pl. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180); Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kunpeszér–Felsőpeszéri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299);

pommel swords<sup>413</sup> but single-edged swords with P-shaped suspension loops are also found decorated with similar frame-bands.<sup>414</sup> Pearl-row decoration can be double<sup>415</sup> or triple<sup>416</sup> in some cases these two variants can be found combined.<sup>417</sup>

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- Kunpeszér–Felsőpezéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14). A press-model of a triple pearl-row decoration was found in the Kunszentmárton burial (Csallány 1933, 26, i. tábla 26).
- 413 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét, Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. V–VIII); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép).
- 414 Budapest XXI. Csepel – Kavicsbánya (Fettich 1926b, 2, Pl. V/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, 1. 178–180); Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Csengőd–Páhipuszta, Kenyérvágóhalom (Bolevár–Páterhalom, Pivarci János földje) (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kunpeszér–Felsőpezéri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299); Kunpeszér–Felsőpezéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14). Similar double-pearl-row decoration was found on silver coverings in the Martynovka hoard (Pekarskaja – Kidd 1994, 116, Taf. 23).
- 415 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; XLIII. T. 1, 11–12, XLIV–XLV. T. 1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21); Csengőd–Páhipuszta, Kenyérvágóhalom (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40); Kecel–Schwacho föld (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25; Biczó 1984, 27, 56. 15. ábra 173. lh.; Simon 1991, 294, 15. kép 2); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. V–VIII).
- 416 Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kunpeszér–Felsőpezéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép).
- 417 Budapest XXI. Csepel–Kavicsbánya (Fettich 1926b, 2, Pl. V/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, 1. 178–180); Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Kecskemét, Sallai út (H. Tóth 1980, 118, Abb. 4–6;

This decoration is mainly distributed in the central region of the Carpathian Basin, around the Danube-Tisza interfluve,<sup>418</sup> however, some Transdanubian examples are known.<sup>419</sup> Their use is dated to the second half of the Early phase, and is the characteristic style of the Bócsa–Kunbábony horizon.<sup>420</sup>

#### 2.4 *The Chape*

Chapes covering the tip of the sword scabbard can be divided into three types, only two of which will be described in the followings. The third type of chape, which develops at the end of the Early phase and the beginning of the Middle phase, of oval shape and with short rim, has a shape which cannot be easily distinguished from hilt caps and therefore this type was discussed alongside the latter artefacts.

Cylindrical chapes covered with gold, silver or copper alloy foil (CH.1)<sup>421</sup> are long (10–20 cm), cylindrical or conical in shape, and are usually framed by

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- Simon 1991, 294); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14).
- 418 Ten examples, 83%.
- 419 Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8).
- 420 Although there can be a chronological difference between cast and stamped examples, it has not been definitively proved. Cast decoration is more frequent on ring-pommel swords, while stamped examples are mostly found on single-edged swords with P-shaped suspension loops.
- 421 Csanytelek–Felgyői határút grave 'A' (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28. kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lőrinczy – Szalontai 1993, 282, Taf. VII); Csolnok–Szedres, Kenderföldek grave No. 13 (Erdélyi 1988, 195, 203; Somlósi 1988, 207–210, fig. 1–2; Simon 1991, 290); Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36); Kölked–Feketekapu A grave No. 227 (Kiss 1996, 69, Taf. 52/8); Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137–138, Taf. 4–5); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15); Kunpeszér–Felsőpeszéri út grave No. 9 (H. Tóth 1984, 12; Simon 1991, 299); Kunpeszér–Felsőpeszéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Kunpeszér–Felsőpeszéri út grave No. 30/A (H. Tóth 1984, 12; Simon 1991, 299); Kunszentmiklós–Bábony grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII); Mór–Akasztódomb grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); Szeged–Kundomb grave No. 180 (Csallány 1939, 137; Kürti 1983, 189; Simon 1991, 305. Salamon – Sebestyén 1995, 28, 55, Pl. 25/5); Szegvár–Sápoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam

frame-bands of ribbed or pearled decoration. The end of the chape is closed by an oval metal plate. This type is dated to the Early phase and can be observed both on single- and double-edged swords (E.I.B/1.b, E.II.A/1.b) and ring-pommel swords (E.I.C/2.b, E.II.B/2.b). This type disappeared at the end of the Early phase, and appears not to have been used together with suspension loops of type 'S.5.a'.

U-shaped chapes<sup>422</sup> cover the edges of the scabbard end, and can be cast of copper alloy or forged of iron, and have a cross section that is U-shaped. Their appearance during the Early phase in the Carpathian Basin can be explained according to Mediterranean influences.<sup>423</sup> It was mainly used for decorating knife scabbards during the Early phase but the form survived and can also be found as part of the scabbards for Late Avar swords.<sup>424</sup>

### 3 Suspension

The suspension of edged weapons cannot be reconstructed from their positions in burials, since most of them were unbuckled from the belt and the sword was deposited next to the deceased or on the top of the coffin, and therefore the reconstruction of such suspension must be based exclusively on the remains of the scabbard and the suspension loops, as well as the representations of warriors with edged weapons on their belt.

Visual sources for the suspension of early medieval edged weapons are spread across a large area and most of them cannot be linked directly to the Avars.<sup>425</sup> However, the similarities in the mode of suspension across such a large area as that of Eurasia suggests that such representations can still be used

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1992, 139–140, Taf. 18); Zillingtal grave No. D-3 (Mehofer 2006, 163, Abb. D); Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1,2, Abb. 6/1,2, Abb. 7; Simon 1991, 312, 16. kép 14).

422 Keszthely–Fenékpuszta, Horreum grave No. 16 (Garam 2001, 159); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.); Leithaprodersdorf grave No. 123 (Mitscha-Mähreim 1957b, 32, Taf. VIII/14–15); Szeged–Fehértó B grave No. 88 (Madaras 1995b, 146, Pl. 17/16).

423 The type is described by Éva Garam (Garam 2001, 159–160, Taf. 116).

424 Leithaprodersdorf grave No. 123 (Mitscha-Mähreim 1957b, 32, Taf. VIII/14–15); the chape from grave No. 88 at Szeged–Fehértó B is dated to the Middle phase (Madaras 1995b, 146).

425 Mainly 7th century wall paintings and petroglyphs are used, such as that of the Sogdian wall paintings from Pendžikent and Afrasiab, Sassanian rock-carvings from Takht-e Suleyman and Taq-e Bostan and Sassanian silver plates (Harper 1983), and wall paintings of Chinese burial chambers of the Tang Period.

as an analogy for the Avar examples, since the scabbard and suspension loops of Avar-age edged weapons closely compare with them.<sup>426</sup>

The suspension of edged weapons changed fundamentally during the Early Avar period as a consequence of the appearance of two-point suspension, wherein the sword was suspended from the belt by two loops, sloping at an angle of some 30–45 degrees (fig. 97 103). This mode of suspension contrasts significantly with that of one-point suspension where the sword hung vertically. This change is significant not only for the study of historical costume but also for the influence it had upon the use and even evolution of the sword itself.

The Avar Age has special significance in the study of these problems, since both the one- and two-point mode of suspension can be found among Avar edged weapons, and it was the period when two-point suspension appeared and spread across Europe. Most of the known Avar suspension loops have been found in burials,<sup>427</sup> and therefore they present an excellent basis for the elaboration of their chronology.

### 3.1 *One-point Suspension*

Vertical one-point suspension meant that the sword could continuously change position and could easily hinder the wearer in his movements.<sup>428</sup> This mode of suspension also made the pulling of the sword difficult which could have been a disadvantage during a battle. The most significant advantage of two-point sloping suspension is that the angle of the sword is constant and affords little freedom of movement of the weapon, and would not hinder its wearer in either walking or riding a horse. The sword could be pulled out much easier and faster which was of significant benefit to a warrior.<sup>429</sup>

One-point suspension was not only used in Merovingian Central Europe but was generally applied to double-edged swords of the 5th–6th centuries from China to Iran and Central Asia. One of their most characteristic forms is the so-called ‘scabbard-slide’ which can be made of precious stone, iron, copper alloy

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426 For the classification of suspension loops, see chapter III.3.d.

427 According to my current knowledge, P-shaped suspension loops were found in 45 Avar age burials, and only 35 swords with P-shaped suspension loops are known outside of the Carpathian Basin, including representations.

428 For the list of one-point suspension, see map 47, fig. 98 96.

429 For the changes in sword suspension, see Nickel 1973, 131–142; Trousdale 1975; Ambroz 1986a; Ambroz 1986b; Overlaet 1993, 93–94; Baumeister 1998; Koch 1998a; Koch 1998b; Koch 2006; Masia 2000.



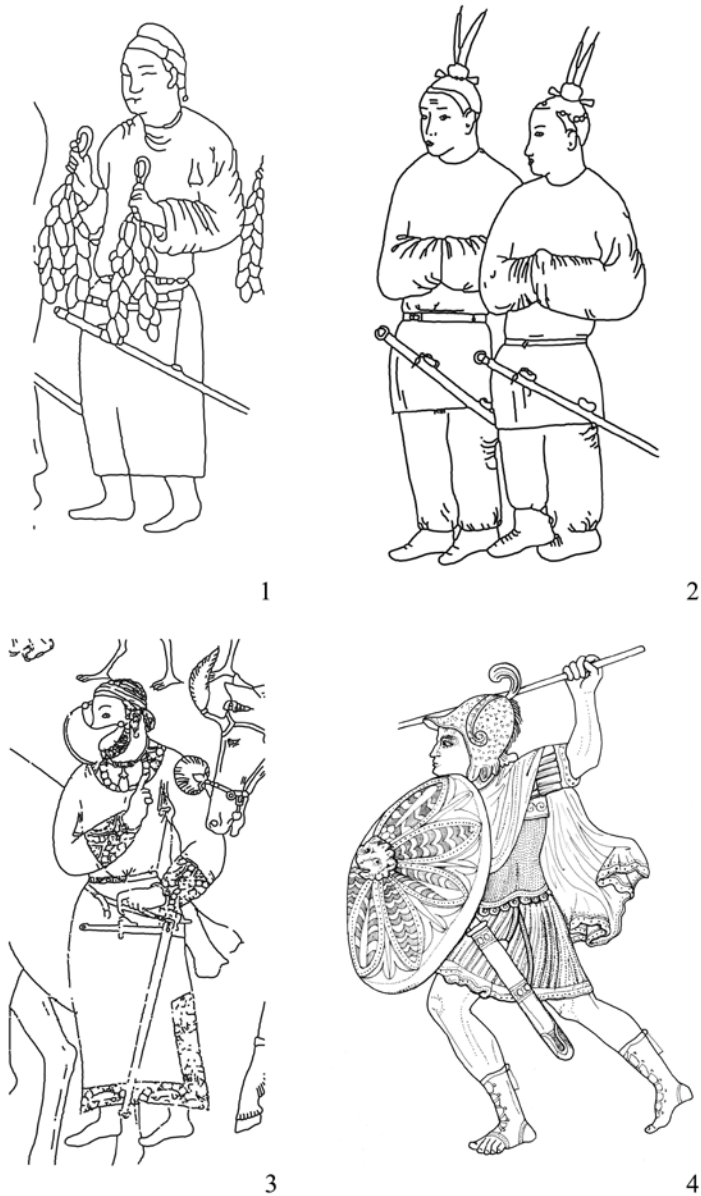


FIGURE 97 *Representations of sword suspension from the 7th century: 1. Representation of a Chinese envoy (Afrasiab 1. building, after Al'baum 1971, ris. 11); 2. Representation of Korean envoys (Afrasiab 1. building, after Al'baum 1971, ris. 11); 3. Representation of a Hephtalite envoy (Afrasiab 1. building, after Al'baum 1971, ris. 11); 4. Representation of two-point suspension on the David-plate in Cyprus (629–630) (drawing by Magda Éber).*



or even wood.<sup>430</sup> This mode of suspension spread from the Late Roman period (3rd century AD) and remained in use until the 5th–6th century, ranging from Korea to Eastern Europe.<sup>431</sup> Minor differences are observable in the way they worn: the Romans used them for shoulder straps, while Persians hanged their swords from the belt with these artefacts.<sup>432</sup> This mode of suspension eventually lost its function and became decorative by the rule of Shapur II (309–379) and Ardashir II (379–383)<sup>433</sup> which can be observed even on the representation of Khosraw II at Taq-e Bostan.<sup>434</sup> This mode of suspension remained in use in some places, like in Funduqistan (Afghanistan) until the 8th century, to judge by Sogdian wall paintings which represent it in use with swords of two-point suspension.

The suspension of spathae was usually by means of one-point suspension during the Early phase. Suspension-slides with animal heads (S.1) were only found on the spatha from grave No. 97 at the Környe cemetery where two iron half-cylinders were decorated with bird heads cast of copper alloy (map 48, fig. 98/1),<sup>435</sup> a similar example of which is known from grave No. 40 at the Linz–Zizlau cemetery.<sup>436</sup> This type of suspension is dated to the 6th century by the Merovingian chronology of Germany.<sup>437</sup> The dating of the burial from Környe is confirmed by association with a pear-shaped wheel-turned pottery vessel with stamped decoration and three-part belt-set.<sup>438</sup>

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430 For scabbard slides: Trousdale 1975.

431 Eastern Europe: Khazanov 1971, tabl. xv; Sasanian Iran: Masia 2000, 191–194; Trousdale 1975.

432 Different way of suspension was described by Kate Masia 2000, 200.

433 Trousdale 1975, 93.

434 Masia 2000, 205.

435 Salamon – Erdélyi 1971, 23, Taf. 15/31–32.

436 Ladenbauer – Orel 1960, Taf. 3, Taf. 35.

437 Kurt Böhner (1987, 428) described them as '*Riemendurchzug mit Vogelkopffenden*' which had already appeared during the 5th century.

438 Salamon – Erdélyi 1971, 23. The chronology of pottery type '1A/ar': (Vida 1999a, 37).

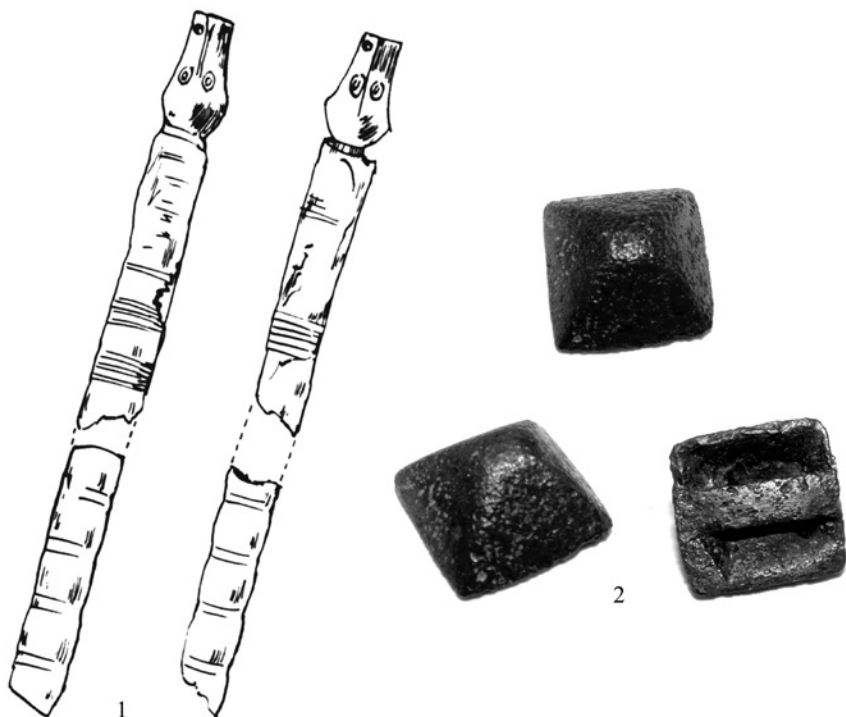


FIGURE 98 *The suspension of spathae: S.1 and S.2.*

Pyramid-shaped spatha buttons cast of copper alloy (S.2, fig. 98/2)<sup>439</sup> were generally used for suspension of these spathae of the Early Avar period,<sup>440</sup> the only exception being from Fenékpusztá-Pusztaszentegyházi dűlő where an elite Lombard burial included an example made of gold with glass inlay.<sup>441</sup>

439 Band (Mezőbánd) (Kovács 1913, 317); Budakalász–Dunapart grave No. 1140 (Vida 2000, 169); Kölked–Feketekapu A grave No. 142 (Kiss 1996, 53, 228, Taf. 455/12); Kölked–Feketekapu A grave No. 230 (Kiss 1996, 69, Taf. 52/4–5); Kölked–Feketekapu B grave No. 82 (Kiss 2001, 27–28, II. Taf. 28/10, 12); Kölked–Feketekapu B grave No. 132 (Kiss 2001, 65–66, Taf. 41/7–8); Kölked–Feketekapu B grave No. 336 (Kiss 2001, 115–117, Taf. 75/13); Noşlac grave No. 6 (Rusu 1962, 275); Târgu Mureş (Marosvásárhely) grave No. 1 (Kovács 1915, 278–279, 36. kép/1) Tiszavárkony–Hugyin-part grave No. 20 (Kiss 1962, 18–19. XIV. t. 2, XXXVII. t. 3; Simon 1991, 308).

440 Menghin 1983, 363–364, Liste C III.1.a.

441 Müller 1999/2000, 345, Abb. 4.1, Abb. 5.1. The examples with glass- or stone inlay enlisted by Wilfried Menghin (1983, 365, Liste C III.1.c).

Pyramid-shaped spatha buttons are found singly<sup>442</sup> or in pairs on the blade of the spatha, usually c. 10 cm from the hilt.<sup>443</sup> These spatha buttons are characteristic of the 7th century Merovingian world. Their function was determined by Wilfried Menghin<sup>444</sup> who reconstructed them on the scabbard with a strap connected to the belt.<sup>445</sup> Their occurrence in pairs is common in Merovingian burials<sup>446</sup> but in some cases such artefacts are found singularly.<sup>447</sup>

Menghin differentiated three types of pyramid-shaped spatha buttons:

- 1 simple pyramid-shaped buttons made of silver, copper alloy or iron with inlay, and some decorated with cloisonné technique
- 2 rectangular or triangular mounts with pyramid-shaped projection and with two or three rivets
- 3 flat pyramid-shaped buttons made of bone with vertical hole.<sup>448</sup>

Among the above listed types, the buttons cast of copper alloy are the most common in both Merovingian and Avar cemeteries. Most of these buttons were found in the Rhine Valley and in south and western Germany, though they were also used in Italy.<sup>449</sup>

A star-shaped copper alloy strap-dividing mount with a pyramid-shaped button in its centre and four triangular projections decorated with pointed crescents is known from grave No. 39 at the Kölked–Feketekapu A cemetery and was probably used for spatha suspension. These mounts were deposited between the right leg and the spatha<sup>450</sup> which already suggests a two-point suspension method.<sup>451</sup> Pyramid-shaped buttons are dated to the second half

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442 Vida 2000, 170.

443 Kölked–Feketekapu B grave No. 82 (Kiss 2001, 27–28, II. Taf. 28/10, 12); Kölked–Feketekapu B grave No. 132 (Kiss 2001, 65–66, Taf. 41/7–8); Kölked–Feketekapu B grave No. 336 (Kiss 2001, 115–117, Taf. 75/13).

444 Menghin 1973a, Abb. 33/38; Menghin 1973b, 245–249.

445 Menghin 1983, 150–151.

446 Neuffer-Müller 1983, 23–24.

447 Its reconstruction is based on the grave No. 64 of Bohlingen-Lummold. (Theune 1999, 66, Abb. 13).

448 Menghin 1983, 150.

449 Menghin 1983, 363. 111/a Fundliste (61 finds). Italy: Nocera Umbra (Pasqui – Paribeni 1918, 324, fig. 172); Casteli Calepio (Alfieri et al. 1958, 145, Tav. XVIII/6); Toscana (von Hessen 1975, Tav. 24/13–14).

450 Kiss 1996, 29.

451 2nd type of pyramid-shaped button (Menghin 1983, 111/2. Fundliste).

of the 6th and first half of the 7th century, as demonstrated by western finds<sup>452</sup> and burials from the Carpathian Basin (map 48).<sup>453</sup>

Flat, cylindrical limestone beads (S.3) in pairs were found on the spatha from grave No. 257 at Kölked–Feketekapu A, located 24 and 27.5 cm from the end of the sword. According to Attila Kiss, who excavated the cemetery, these beads can be interpreted as part of the sword suspension,<sup>454</sup> though this feature is without any formal analogy.

The reconstruction of spatha suspension used the position of these artefacts.<sup>455</sup> This suspension method is only characteristic for those spathae of western origin during the Early phase, and this feature disappeared by the time of the Middle and Late phases. It is important to note that the suspension loops known from other Avar swords were not used on spathae at all, suggesting that spathae had their own specific method of being worn.<sup>456</sup>

Spathae were normally suspended on spatha belts, as studied by Tivadar Vida from Avar-age burials.<sup>457</sup> Three spatha belt types are known from the Carpathian Basin: *Weihmörting*, *Herrlisheim-Schwarzhendorf* and *Civezzano* types.

*Weihmörting* type spatha belts are characterised by long rectangular belt-mounts cast of copper alloy.<sup>458</sup> This type already appeared with the Lombards

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452 Wilfried Menghin (1983, 150–151) dated them between the end of the 6th and the end of the 7th century, Christoph Grünewald (1988, 230–241) to his 5th phase (620–650/60), Gudula Zeller (1992, 66) dated them to the IIIrd (520/530–600) and IVth (600–670/80) phase, while Christian Peschek (1996, 52) dated such finds to the IInd JM phase of Ament (630/40–670/80) at the cemetery of Kleinlangen. Such buttons were used in the 7th century in the Altenerding cemetery (Losert – Pleterski 2003, 402).

453 The earliest example from the Carpathian Basin was found in Fenépuszta–Pusztaszentegyházi-dűlő from a Langobard burial dated to the beginning of the 7th century by Róbert Müller (1999/2000, 345). This dating is probably too late for the interlace ornament, placed between Animal Style I and II, which was dated to the late 6th century (Heinrich-Tamáška 2004, 168–169; Heinrich-Tamáška 2006b, 514, Abb. 1.B). The burial is dated by C14 method to 530s by Peter Stadler (et al. 2003, 268–269).

454 Kiss 1996, 75.

455 For these reconstructions, see: Menghin 1973a, Abb. 33; Menghin 1983, 114–115, 150; Baumeister 1998.

456 Avar-age spatha belts were reconstructed by Vida 2000, 161–175.

457 Vida 2000, 161–175.

458 This term was first used by Hans Zeiß (1934, 39), although the type was defined by Hermann Ament (1974, 153–161).

of Pannonia<sup>459</sup> and their use continued throughout the Avar Age.<sup>460</sup> Avar examples were usually decorated with interlace ornament.<sup>461</sup> The spatha belt was usually twisted on the blade of the sword<sup>462</sup> which is known from Merovingian Europe as well.<sup>463</sup> *Weihmörting* type spatha belt-sets were used from the last third of the 6th to the first third of the 7th century in Central Europe.<sup>464</sup>

Spatha belts known as '*Herrlisheim-Schwarzrheindorf type*' are characterised by their rectangular shape, cast technique and openwork (rectangular) decoration, with the frame of these mounts being pointed. These mounts were fixed by six rivets (three on each side) to the belt, representing an Italian workshop tradition.<sup>465</sup> Examples of this type are only known from the cemetery at Szekszárd–Bogyiszlói út.<sup>466</sup> Its chronology is similar to that of the *Weihmörting type*.

Spatha belts of '*Civezzano type*' are known from the Jankovich collection at the Hungarian National Museum but are unfortunately of unknown origin, though are probably from an elite burial of the Carpathian Basin, as a rhombic

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459 Masque type decoration is known from Lombard pieces: Szentendre grave No. 34 (Bóna 1974, 122, 62–63). Wilfried Menghin (1983, 359) classified this artefact to his Bülach – Nocera Umbra type (Menghin 1983, Liste C II.1). This type is also known from grave No. 65 at the Pottenbrunn cemetery (Stadler et al. 2003, 267, Abb. 3).

460 Three pieces of rectangular belt-mounts cast of copper alloy and decorated with double-interlace ornament were found together with a buckle and a strap-end in grave No. 390 at the Szekszárd–Bogyiszlói út cemetery. The belt was twisted onto the spatha (Rosner 1999, 54, Taf. 28/1). For its reconstruction: Vida Tivadar (2000, 163, Abb. 2). An exact analogy of the spatha belt is known from grave No. 268 at Kölked–Feketekapu A (Kiss 1996, 78–79, Taf. 59).

461 Kölked–Feketekapu A grave No. 268 (Kiss 1996, 78–79, Taf. 59); Szekszárd–Bogyiszlói út grave No. 390 (Rosner 1999, 54, Taf. 28) For similar pieces from Central Europe, see: Menghin 1983, 147.

462 Szekszárd–Bogyiszlói út grave No. 390 (Rosner 1999, 54, Taf. 28): a similar custom was observed in the Gepid burial at Tiszaróff (<http://www.hnm.hu/tud/hu/kozle/Announcement.php?ID=2586>; <http://nol.hu/cikk/424087/>; <http://www.mult-kor.hu/cikk.php?article=15458>).

463 Koch 1990, 176; Clauß 1976, 55–56.

464 Menghin 1983, 40–46; Koch 1990, 176; Reiß 1994, 56.

465 Menghin 1983, 253; Vida 2000, 164–165.

466 Szekszárd–Bogyiszlói út grave No. 16 (Rosner 1999, 13, Taf. 2) and grave No. 29 (Rosner 1999, 11, Taf. 3/3).

mount can be interpreted as a starting point for a strap.<sup>467</sup> This spatha belt type was used from the first third to the end of the 7th century.<sup>468</sup>

### 3.2 *Two-point Suspension*

Two-point suspension means that edged weapons were suspended by two loops usually at an angle of 30–45° which first appeared on daggers or seaxes of the 5th century, like the dagger of Novogrigorevka from the Hunnic period<sup>469</sup> or the seax with gold fittings from the grave of Childerich in Tournai.<sup>470</sup> Similar daggers are also known from the Sogdian wall paintings and from the frescoes of Kucha in Xinjiang (China) dated to the end of the 5th and beginning of the 6th century.<sup>471</sup> Exact analogies for these suspension loops are known from the Hunnic burial of Tugozvonovo (Kazakhstan) on a sword scabbard.<sup>472</sup> Daggers of earlier periods were worn vertically, fixed to the thigh by means of four loops.<sup>473</sup>

Daggers with two suspension loops were suspended sloping or horizontally, the former being characteristic of the Tokhars of Eastern Turkestan, while the latter of the Sogdians of Transoxiana.<sup>474</sup> The scabbards with P-shaped suspension loops of Kerim-lo (Kyongju) of South Korea and Borovoe (Northern Kazakhstan) show some archaic features.<sup>475</sup> The suspension loops of daggers were usually semicircular or rectangular during the 5th and first half of the 6th century, while from the second half of the 6th century P-shaped suspension loops became common.

467 Christlein 1971, 22–26, Abb. 7; Menghin 1983, 42–45, Abb. 32–33; Reiß 1994, 56–58, Abb. 15, reconstructions: Vida 2000, 167–168; Menghin 1983, 48–53; Baumeister 1998, 166–170; Terzer 2001, 176–181; Schwarz 2004, 60–94. Most of the known examples of Civezzano type were made of iron decorated with inlay.

468 Menghin 1983, 48–52, 60.

469 Minaeva 1927, t. VI, vyp. III.

470 Anatolij Konstantinovich Ambroz (1986a, 33, ris. 3) suggested a new reconstruction for the seax of Tournai on the basis of the dagger from Novogrigorevka, instead of the former suggested by Arbman (1948). Its most recent reconstruction was suggested by Dieter Quast (2003, 597–614).

471 Belenitskij – Marshak 1973; Belenitskij – Marshak 1979. For the chronology of the Pendzhikent wall paintings (Azarpay 1981, 35–47).

472 The chronology of this weapon is problematic, since the blade was straight and single-edged but the gold covering of the scabbard was decorated by polichrome style characteristic for the 5th century (Umanskiy 1978, 138, Ris. 9).

473 This mode of being worn is also known from the 6th century in Abkhazia (Voronov – Shenkao 1982, 148–154, ris. 17–19).

474 Ambroz 1986a, 31.

475 Ambroz 1986a, 31.

Swords with P-shaped suspension loops spread during the second half of the 6th century throughout Eurasia (map 51).<sup>476</sup> A P-shaped suspension loop (S.4) is a general term for loops of various shape (B-shaped and triple-arched examples are also known) and use from the 6th–8th centuries. P-shaped suspension loops were distributed geographically across a huge area, from Italy to Japan,<sup>477</sup> and are found not only among steppe nomadic people but also amongst settled civilisations as well. Their appearance can be regarded as both an important chronological feature and an innovation in warfare that was widely spread across Eurasia.

Research on P-shaped suspension loops played a significant role in Avar archaeology from its very beginnings.<sup>478</sup> These types were erroneously interpreted according to ethnic differences, rather than by chronological differences.<sup>479</sup> These suspension loops were studied and listed by Csanád Bálint from across the whole of Eurasia who first drew attention to its distribution among settled civilisations.<sup>480</sup>

Several attempts were made to classify the shapes and decoration of these P-shaped suspension loops.<sup>481</sup> Three main forms of such loops can be distinguished: a. Those with big semicircular head and a short curved projection, b. Where the length of the semicircular head and the projection is equal, c. Those where the projection is longer than the head (fig. 99).<sup>482</sup>

### 3.2.1 Big Semicircular Head and Short, Curved Projection (S.4.a)

This type is the most common suspension loop during the Early phase in the Carpathian Basin: 33 pieces are currently known (map 49, figs. 100–101).

476 The map is based on the lists of: Ambroz 1986b; Bálint 1993, 29–31; Koch 1998a, 572–584.

477 Bálint 1993, 269–270; for Far Eastern pieces: Koch 1998a, 571–598.

478 Nándor Fettich (1926a, 166–171; Fettich 1926b, 1–14) called them Kul-Oba–Taman' type, and regarded them as evidence for Pontic influence. Dezső Csallány (1939, 121–180) called these swords the Kiszombor – Deszk type and dated them to the Early phase.

479 Bóna considered ring-pommel swords, following Csanád Bálint (1978, 206), as being of Far Eastern or Inner Asian origin, while swords with P-shaped suspension loops to be of Central Asian origin (Bóna 1980, 51–52; Bóna 1984a, 310–311). This assumption was also accepted by László Simon (1991).

480 Csanád Bálint (1993, 269–270, Fundliste 8) used the lists of Éva Garam (1990, 253–272) and Anatolij Konstantinovich Ambroz (1986b). He did not distinguish between suspension loops of various types.

481 On the classification of P-shaped suspension loops: Garam 1990, 255; Garam 1991a; Garam 1991b, 222, 3. kép, 5. kép 2).

482 This classification is basically equivalent with that of Éva Garam (1990, 255, Abb. 7) and her D, P and R types.

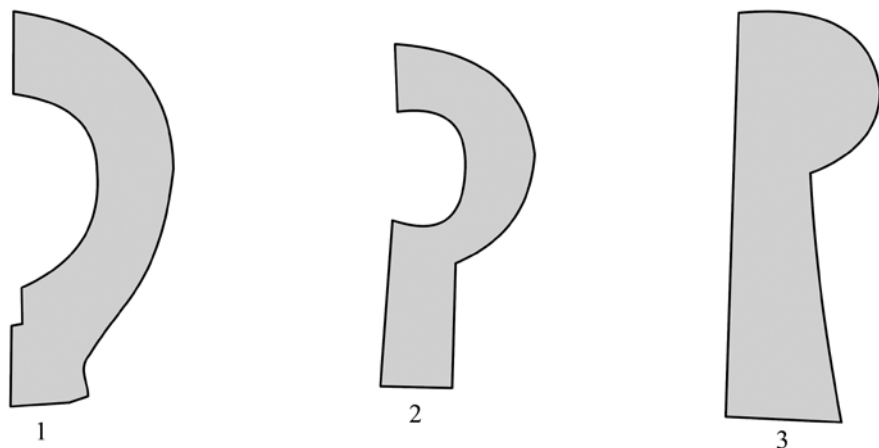


FIGURE 99 *The basic types of P-shaped suspension loops.*

These suspension loops were decorated with various ornaments and methods, among them the most popular were the Animal Style II<sup>483</sup> and glass inlay decoration.<sup>484</sup> The stamped copy of glass inlay is observed on the P-shaped suspension loops stamped of gold sheet from grave No. 1 at Zsámbok (fig. 100/17).<sup>485</sup> Plain undecorated suspension loops are the most common, some of which were equipped with a small black hemispherical glass cabochon framed by bearded wire.<sup>486</sup> Characteristic decoration of P-shaped suspension loops is a pearl-frame which appears on loops ornamented with the Animal Style II

483 Börcs–Nagydomb grave No. 10 (Tomka 2005, 155–160); Csengőd–Páhipusztá, Kenyérvágohalom (Bolevár–Páterhalom, Pivarcsi János földje) (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40); Kölked–Feketekapu A grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1); Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15) Among them the examples of Kölked and Páhipusztá are the closest parallels.

484 Csepel–Kavicsbánya (Nagy 1998, I. 178–180).

485 Garam 1983, 140; Garam 1993, 110.

486 Csepel–Kavicsbánya (Nagy 1998, I. 178–180); Csákerény–Orondpusztá grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Kölked–Feketekapu A grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1), the imitation of this decoration was observed on the example from grave No. 1 from Zsámbok (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7).



(fig. 100/12–15),<sup>487</sup> glass inlay (fig. 100/16),<sup>488</sup> and stamped foil,<sup>489</sup> as well as on plain, undecorated examples (fig. 100/1–11).<sup>490</sup>

Most of the examples of this type have been found evenly distributed across the Great Hungarian Plain<sup>491</sup> and Transdanubia (map 49).<sup>492</sup> This type is dated by a copy of a solidus of Maurice from the burial of Szegvár–Sápoldal to the end of the 6th or beginning of the 7th century.<sup>493</sup> The chronology of this type is not limited to the first half of the Early phase<sup>494</sup> and it remained in use in the second third of the 7th century.<sup>495</sup>

P-shaped suspension loops with equal length of head and projection (S.4.b) are usually plain and undecorated (fig. 101).<sup>496</sup> The silver or copper alloy covering was usually fixed by means of three rivets to the loop<sup>497</sup> which was already

487 Börcs–Nagydomb grave No. 10 (Tomka 2005, 155–160); Csengőd–Páhipuszta, Kenyervágóhalom (Bolevár–Páterhalom, Pivarcsi János földje) (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40); Kölked–Feketekapu A grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1).

488 Csepel–Kavicsbánya (Nagy 1998, I. 178–180).

489 grave No. 1 from Zsámbok (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7).

490 Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290); Paks–Gyapa TO33, grave No. 12.

491 14 examples, 58.3%.

492 Ten examples, 41.6%.

493 István Bóna (1980, 36) dated this burial by a contemporaneous imitation of a solidus of Maurice (582–602). See: Garam 1992, 139–140.

494 The burial from Csanytelek (Kürti 1990, 79–80, 1. kép; Simon 1991, 289) is dated by its stamped belt-set decorated with fish-motives to the beginning of the 7th century (Garam 2001, 141). The example from Fajsz (Balogh – Kóhegyi 2001, 333–363) was dated by a light grey wheel-turned pottery vessel of type '1B2/11' (Vida 1999a, 56–57, Abb. 7), Csilla Balogh and Mihály Kóhegyi (2001, 345) dated the cemetery to the second third of the 7th century.

495 The swords from Csepel (Nagy 1998, I. 178–180) and Csákberény (Kiss 1962, 70; Simon 1991, 290) belong to the Bócsa – Kunbábony horizon by way of their hilt-coverings. The later use of this type is verified by the loop of the second sword from Kunbábony (H. Tóth – Horváth 1992, 59–60, Taf. XXXIII).

496 Kiskunfélegyháza–Pákapuszta (László 1955, 236, LXIX. t. 23; Simon 1991, 295; Garam 1991a, 143–144, 10. kép; Balogh 2002, 307); Szeged–Fehértó A grave No. 26 (Csallány 1939, 137; Madaras 1981, 35, 3. t.; Simon 1991, 305; Madaras 1995b, 17, Pl. 4/14); Szeged–Fehértó A grave No. 34 (Madaras 1995b, 18, Pl. 6/11); Zsámbok grave No. 2 (Garam 1983, 144, Abb. 5/7; 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7).

497 Szeged–Fehértó A grave No. 34 (Madaras 1995b, 18, Pl. 6/11); Zsámbok grave No. 2 (Garam 1983, 144, Abb. 5/7; 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7).

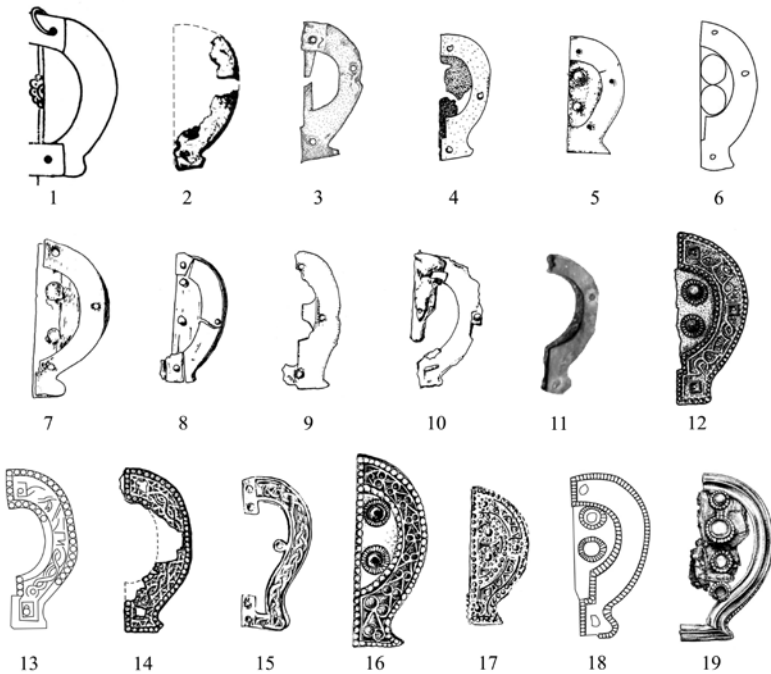


FIGURE 100 *P*-shaped suspension loops: S.4.a: 1. Mór–Akasztódomb, grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302.); 2. Csanytelek–Felgyői határút, grave No. A (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173., 28 kép; Kürti 1990, 7980, 1. kép; Simon 1991, 289; Lőrinczy – Szalontai 1993, 282, Taf. VII.); 3. Fajszt–Garadomb, grave No. 2 (Balogh – Kőhegyi 2001, 333–363.); 4. Dabas (Gyón)–Paphegy, grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6; 16. kép 12; Simon – Székely 1991, 188., 191–192., 193/195.); 5. Tápé-85. számú kútkörzet, grave No. 11 (Simon 1993b, 31–34., 1–6. képek); 6. Zamárdi, Réti földek III. (Simon 1991, 311.); 7. Mali Idoš, grave No. 72 (Gubitz 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301., 16. kép 16.); 8. Környe, grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); 9. Gátér–Vasúttállomás, grave No. 212 (Kada 1906, 215., 218. és c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20.); 10. Környe, grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 32/3, Abb. 4/2; Simon 1991, 297, 16. kép 18.); 11. Zsámbok, grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14.); 12. Kölked–Feketekapu A, grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.). 13. Csongód–Páhipuszta, Kenyérvágóhalom (Bolevár–Páterhalom, Pivarsci János földje) (Fettich 1926a, Taf. v/18–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40.); 14. Börcs–Nagydomb, grave No. 10 (Tomka 2005, 155160.); 15. Kunmadaras–Újvárosi temető (Hampel 1905. II. 362; Bóna 1982–83, 115–117, n. kép 1–4; Simon 1991, 299, 16. kép 15.); 16. Budapest XXI. Csepel – Kavicsbánya (Fettich 1926b, 2, Fig. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nemeskéri 1955, 194, 208; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1,5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; idem 1991, 288–289, 16. kép 13.; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180.); 17. Zsámbok, grave No. 2 (Garam 1983, 144, Abb. 5/7, 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.); 18. Csákberény–Orondpuszta, grave No. 150 (Kiss 1962, 70; Simon 1991, 290.); 19. Kunszentmiklós–Bábony, grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.).

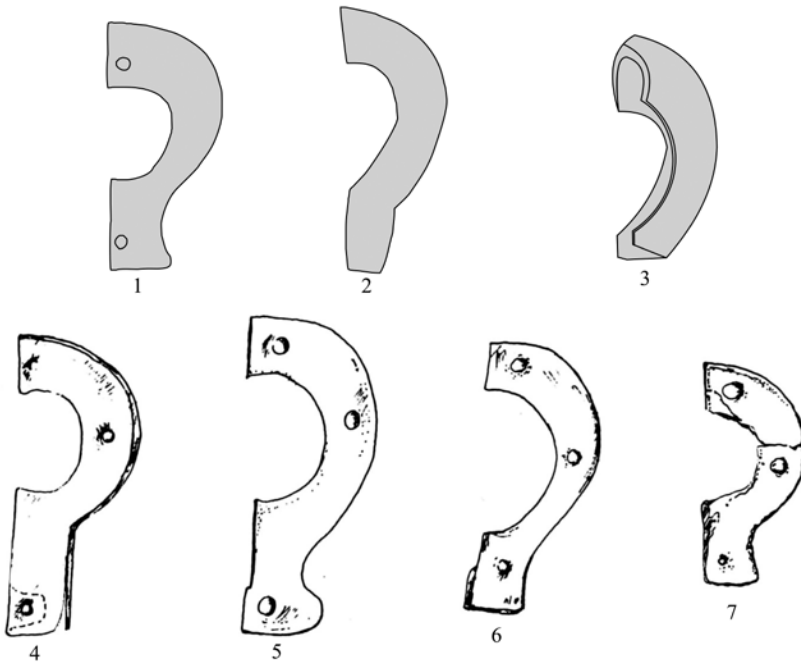


FIGURE 101 *P-shaped suspension loops: S.4.b: 1. Bačko Petrovo Selo–Čik, grave Nr. 28 (Brukner 1968, 172, T. LIX/1; Simon 1991, 289, 16. kép 11; ADAM, 30; Bugarski 2009, 39, 116–117, Fig. 102, T.VI.); 2. Szeged–Fehértó A, grave Nr. 26 (Csallány 1939, 137; Madaras 1981, 35, 3. t.; Simon 1991, 305; Madaras 1995b, 17, Pl. 4/14.); 3. Szeged–Fehértó A, grave Nr. 34 (Madaras 1995b, 18, Pl. 6/11.), 4. Zsámbok, grave Nr. 2 (Garam 1983, 144, Abb. 5/7–9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.); 5. Törökbálint, site Nr. 36/25, grave Nr. 1 (Kovrig 1957, 119–120, XVII. T. 1–2., XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8.); 6. Visznek–Kecskehegy, grave Nr. 68 (Török 1975a, 334, 341, 343, Fig. 6/1, 16; Simon 1991, 311, 16. kép 9.); 7. Szegvár–Sáppoldal (Bóna 1979, 5., 8., 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139/140, Taf. 18.).*

common among the loops of type F.4.a.<sup>498</sup> All of the known examples were found in the Great Hungarian Plain and are dated to the Early phase.

498 Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6, 16. kép 12; Simon – Székely 1991, 188. 191–192. 193–195); Fajsz–Garadomb grave No. 2 (Balogh – Kőhegyi 2001, 333–363); Gátér–Vasúttállomás grave No. 212 (Kada 1906, 215. 218. c. rajz; Fettich 1926a, 8. 10. x. t. 27; Simon 1991, 292. 16. kép 20); Környe grave No. 99 (Salamon – Erdélyi 1971, 23. Taf. 16. Taf. 32/2, Abb. 4/3; Simon 1991, 297. 16. kép 19); Mali Iđoš (Kishegyes) grave No. 72 (Gubitzta 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301. 16. kép 16); Szegvár–Sáppoldal (Bóna 1979, 5. 8. 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306. 10. kép 4, 16. kép 10; Garam 1992, 139–140. Taf. 18); Visznek–Kecskehegy grave No. 68 (Török 1975a, 334. 341. 343. fig. 6/1. 16; Simon 1991, 311. 16. kép 9); Zsámbok grave No. 1 (Garam 1983, 140. Abb. 1/1,2. Abb. 6/1,2. Abb. 7; Simon 1991, 312. 16. kép 14).

The third variant of P-shaped suspension loops is characterised by a shaft that is longer than the length of the semicircular head (S.4.c): the projections of this type are usually long, rectangular or trapezoid and their heads are short and semicircular (fig. 102).<sup>499</sup>

The examples from Kiszombor<sup>500</sup> (fig. 102/6) and Deszk<sup>501</sup> (fig. 102/7) are close analogies for one another based on their similar decoration: their characteristic feature being the pearl-frame and hemispherical cabochon framed by pearl-wire, suggesting a common workshop. However, most examples of this type are plain and undecorated, being composed of two sheets, the obverse and reverse sheets. The reverse is a metal sheet covering the whole surface, while the obverse only covers the outer edge of the loop. The loop was reinforced by a band onto the scabbard.<sup>502</sup> Some loops were covered with silver foil on the obverse and with copper alloy on their reverse.<sup>503</sup> On a single example only the edges of the loop were decorated with a copper alloy covering of U-shaped cross section.<sup>504</sup>

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- 499 Aradac–Mečka grave No. 31 (Nađ 1959, 58, Tab. VIII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98. 152. LXXIX/6; Simon 1991, 286); Biatorbágy–Hosszúréték (MO PM 016 site) grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. kép); Deszk G grave No. 8 (Csallány 1939, 127. 129. 1. t. 2–2a, 2. kép 2–2a; Simon 1991, 291, 16. kép 6. Lőrinczy 1994, 113–114); Gátér–Vasútállomás, stray find (Fettich 1926a, 7; Pl. x/24–24a; Simon 1991, 292. 16. kép 1–2); Győr–Téglavető-dűlő grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39. XIV); Iváncsa–Szabadság utca 20 (Bóna 1970, 243; 251. 8/5); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. 1. Abb. 1); Kiszombor O grave No. 2 (Csallány 1939, 125–126. 1. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295. 16. kép 5; Garam 1992, 142, Taf. 35–36); Kunpeszér–Felsőpeszéri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299); Novi Kneževac (Törökkanizsa) (Hampel 1900, 170–175; Hampel 1905, 357–360; Vinski 1958, 11. tab. IV. 1–12; Dimitrijević – Kovačević – Vinski 1962, 23, Abb. 3; Mrkobrad 1980, LXXIX/1; Simon 1991, 303, 16. kép 4); Százard (Fettich 1926a, 7. x. t. 1; Bóna 1982–83, 126–127. 11. j.; Simon 1991, 305. 16. kép 3; Kovács 2001, 185. 187–190, 7. kép 10).
- 500 Csallány 1939, 125–126, 1. t. 1–1a, 2. kép 1; Simon 1991, 295. 16. kép 5; Garam 1992, 142, Taf. 35–36.
- 501 Csallány 1939, 127. 129. 1. t. 2–2a, 2. kép 2–2a; Simon 1991, 291, 16. kép 6.
- 502 Similar undecorated examples: Biatorbágy–Hosszúréték grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. képek); Győr–Téglavető-dűlő grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39. XIV); Iváncsa–Szabadság utca 20 (Bóna 1970, 243; 251. 8/5); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. 1, Abb. 1) Most of them are dated to the Middle phase.
- 503 Iváncsa–Szabadság utca 20 (Bóna 1970, 243; 251. 8/5); Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187. Taf. 1, Abb. 1). Both pieces are dated to the Middle phase.
- 504 The loops from grave No. 43 of Aradac are problematic because they were found in a female burial, and it probably belonged to a purse and not a sword (Nađ 1959, 59). This

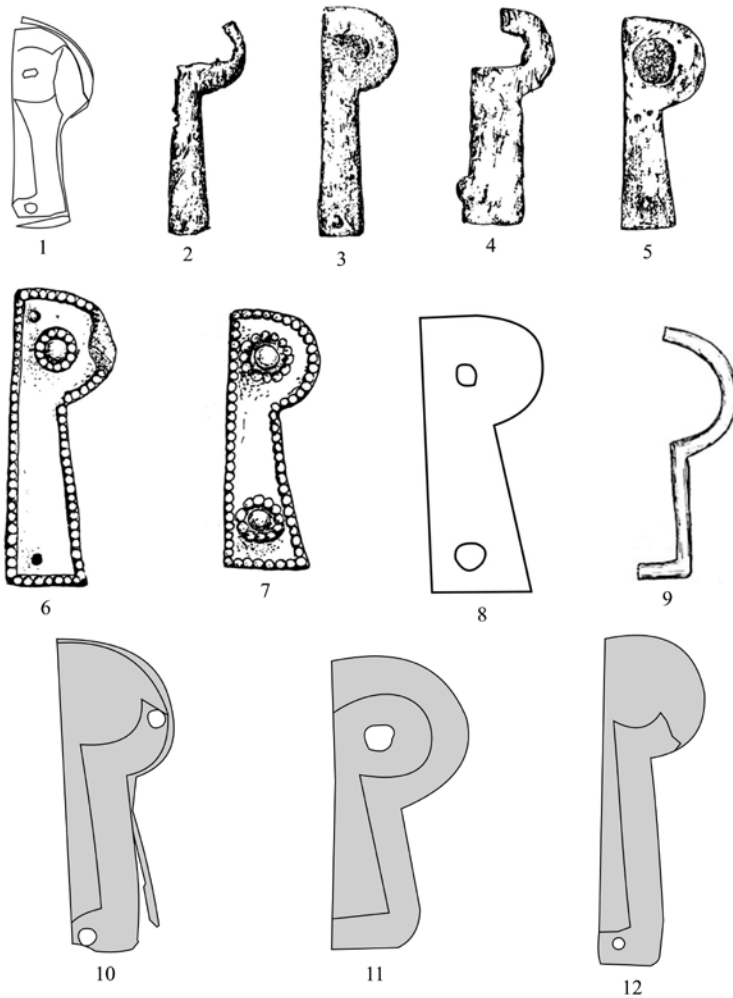


FIGURE 102 *P*-shaped suspension loops: S.4.c: 1. Győr–Téglavető-dűlő, grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39, XIV.); 2–3. Gátér–Vasútállomás, stray find (Fettich 1926a, 7.; Fig. x/24–24a; Simon 1991, 292, 16. kép 1–2.); 4. Szárazd (Fettich 1926a, 7., x. t. 1; Bóna 1982–83, 126–127, n. j.; Simon 1991, 305, 16. kép 3; Kovács 2001, 185, 187190, 7. kép 10.); 5. Novi Kneževac (Hampel 1900, 170–175; Hampel 1905, 357–360; Vinski 1958, 11. tab. IV. 1–12; Dimitrijević – Kovačević – Vinski 1962, 23. Abb. 3; Mrkobrad 1980, LXXIX/1; Simon 1991, 303, 16. kép 4.); 6. Kiszombor O, grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 7. Deszk G, grave No. 8 (Csallány 1939, 127, 129, I. t. 2–2a, 2. kép 2–2a; Simon 1991, 291, 16. kép 6; Lőrinczy 1994, 113–114.); 8. Aradac–Mečka, grave No. 31 (Nad 1959, 58, Tab. VIII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152., LXXIX/6; Simon 1991, 286.); 9. Aradac–Mečka, grave No. 43 (Nad 1959, 59, Tab. IX/9.); 10. Biatorbágy–Hosszúréték (MO PM 016 lh.); grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 78. képek); 11. Ivánca–Szabadság utca 20. (Bóna 1970, 243, 251. 8/5.); 12. Kecskemét–Ballószög–Karácsonyi szőlő, grave No. 1 (Szabó 1939, 185–187, Taf. 1, Abb. 1.).

This variant (S.4.c) is evenly distributed, with examples found in both Transdanubia<sup>505</sup> and the Great Hungarian Plain,<sup>506</sup> with the number of finds from the southern part of the Great Hungarian Plain being particularly high (map 49). The use of this type from Kiszombor is dated by a solidus of Phocas (602–610) to the beginning of the 7th century, but the same type was continuously used even during the Middle phase.<sup>507</sup>

### 3.2.2 Semicircular Suspension Loops (S.5)

Semicircular suspension loops are chronologically later than the above mentioned P-shaped loops, and are found in pairs on both single-edged swords and sabres (map 50, fig. 103). The name ‘D’-shaped can be misleading since Éva Garam used it to describe the first variant of P-shaped loops (S.4.a), and therefore it will instead be termed according to its geometric form as semicircular, while the elongated loops will be described as D-shaped. This type is primarily characteristic of the Middle phase, though it had already appeared during the end of the Early phase.

Regular semicircular suspension loops covered with silver and copper alloy foils (S.5.a)<sup>508</sup> are usually decorated with silver<sup>509</sup> or copper alloy<sup>510</sup> sheet on

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example can warn us that artefacts of similar shape could have completely different functions.

- 505 Biatorbágy (Horváth – Reményi – Tóth 2004, 30–31, 7–8. kép), Iváncsa (Bóna 1970, 243, 251. 8/5), Győr grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39. XIV), Százard (Kovács 2001, 185. 187–190, 7. kép 10).
- 506 Aradac grave No. 31 (Nađ 1959, 58, Tab. VIII/1), Deszk (Csallány 1939, 127. 129. I. t. 2–2a, 2. kép 2–2a), Gátér (Fettich 1926a, 7, Pl. x/24–24a), Kecskemét–Ballószög (Szabó 1939, 185–187. Taf. I. Abb. 1), Kiszombor (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1), Novi Kneževac (Hampel 1900, 170–175; Hampel 1905, 357–360).
- 507 The finds from Biatorbágy (Horváth – Reményi – Tóth 2004, 30–31, 7–8. kép), Kecskemét–Ballószög (Szabó 1939, 185–187. Taf. I. Abb. 1) and Iváncsa (Bóna 1970, 243, 251. 8/5) are dated to the Middle phase, the Iváncsa burial being one of the leading finds of the Middle phase with its sabre, coin-imitation, granulated earring and harness-mounts (Bóna 1970, 243–250).
- 508 Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50. Abb. 9, B, 2; Mrkobrad 1980, 98. 152. LXXIX/7; Simon 1991, 289); Győr–Téglavető-dűlő grave No. 58 (Fettich 1943, 12, 16); Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428); Pókaszepetk–Mesterföldék, Avar utca grave No. 332 (Sós – Salamon 1995, 166–167. Pl. xx); Tárnok (Garam 1991b, 222, 3. kép, 5 kép 2).
- 509 Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50. Abb. 9, B, 2; Mrkobrad 1980, 98. 152. LXXIX/7; Simon 1991, 289); Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428).
- 510 Győr–Téglavető-dűlő grave No. 58 (Fettich 1943, 12, 16).



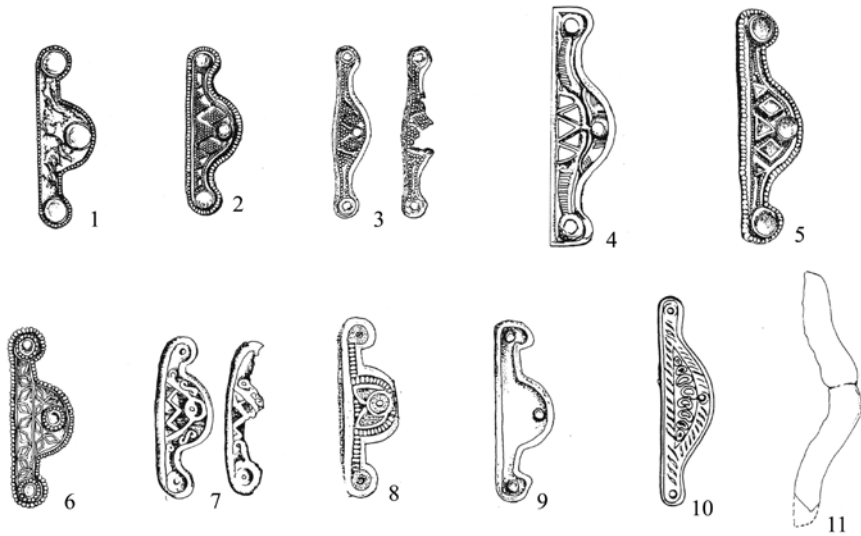


FIGURE 103 *Triple-arched suspension loops (S.6):* 1. Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137138, Taf. 4–5.); 2. Kecel–Schwacho föld (László 1955, 232–233, Fig. 64, LI–LII. t., LIII. t. 25; Biczó 1984, 27, 56. 15. ábra (térkép) 173. lh.; Simon 1991, 294, 15. kép 2.); 3. Tiszaalpár–Várdomb, grave No. A (Fettich 1926a, 8., Fig. x/26; Bóna – Nováki 1982, 25, 98; Simon 1991, 308, 15. kép 3.); 4. Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71., Taf. LI; László 1955, 228–230, XLIII. T. 1., 11–12., XLIV–XLV. T. 1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 5. Kunszentmiklós–Bábony, grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.); 6. Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); 7. Tiszaalpár–Tiszaújfalu (Simon 1991, 307, 15. kép 7.); 8. Sengele–Jójárt, grave No. 1 (Csallány 1939, 911, 1. tábla 3–3a, II. tábla; Simon 1991, 290., 15. kép 8.); 9. Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.); 10. Mandelós (Ercegović – Pavlović 1973–74, 108, Fig. 1, I. t. 1, Fig. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 11. Tiszavasvári.

their obverse but those where the edges have been reinforced by iron bits are also known (fig. 104/1).<sup>511</sup> Only five such examples are known and are evenly distributed in Transdanubia<sup>512</sup> and the Great Hungarian Plain.<sup>513</sup> These loops

511 Tárnok (Garam 1991b, 222, 3. kép, 5. kép 2).

512 Győr grave No. 58 (Fettich 1943, 12, 16); Pókaszeptek–Mesterföldek, Avar utca grave No. 332 (Sós – Salamon 1995, 166–167. Pl. xx); Tárnok (Garam 1991b, 222, 3. kép, 5. kép 2).

513 Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, fig. 6; Simon 1991, 289); Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428).

are dated to the second third of the 7th century,<sup>514</sup> and are a mixture of Early Avar traditions and new Middle Avar elements.

Elongated D-shaped suspension loops have a different structure: their edges are covered with cast copper alloy or silver bands (S.5.b) with U- or L-shaped cross section. These artefacts are mainly known from the Middle phase (fig. 104/2).<sup>515</sup> Most of them were cast of silver,<sup>516</sup> with only one copper alloy example being known.<sup>517</sup> All of the five known examples were found in Transdanubia,<sup>518</sup> with none being known east of the Danube. Most of them are dated to the Middle phase,<sup>519</sup> with only the example from Komárno belonging to the beginning of the Late phase.<sup>520</sup>

Ogee-shaped (a pointed arch consisted of two S-shaped arches) suspension loops (S.5.c) are made of gold and are closely connected to curved sabres with star-shaped crossguard covered with gold foil (fig. 104/3). Both of the known examples are known from Transdanubia.<sup>521</sup> This shape is extremely rare but a

514 On the chronology of the type: (Garam 1991a, 147; Garam 1991b, 222).

515 Igar-Vámszőlőhegy, Petőfi u. 56. find 'III' (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14); Kehidakustyán–Kehida, Központi Tsz-major grave No. 61 (Szóke 2002, 75. 11); Komárno–8. Shipyard grave No. 128 (Trugly 1993, 206. Taf. xxxv/1); Komárno–8 Shipyard grave No. 131 (Trugly 1993, 207–209. Taf. xl/5); Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15).

516 Igar-Vámszőlőhegy, Petőfi u. 56. find 'III' (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14); Kehidakustyán–Kehida, Központi Tsz-major grave No. 61 (Szóke 2002, 75. 11); Komárno–8. Shipyard grave No. 128 (Trugly 1993, 206. Taf. xxxv/1); Komárno–8 Shipyard grave No. 131 (Trugly 1993, 207–209. Taf. xl/5).

517 Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15).

518 Igar (Marosi 1931, 6–7; Fülöp 1987, 17. 8. ábra; Fülöp 1988, 167–168. Abb. 14), Kehida (Szóke 2002, 75. 11), Komárno Shipyard grave No. 128 and 131 (Trugly 1993, 206. Taf. xxxv/1; 207–209. Taf. xl/5), Kölked B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15).

519 The IIIrd find of Igar is one of the leading finds of the Middle phase (Fülöp 1988), the loop from Kehida being equipped to the scabbard of a curved sabre with star-shaped crossguard covered by silver foil (Szóke 2002, 75. 11) (CG.5.a) which dates the burial to the Middle phase. The example of Kölked (Kiss 2001, 94–95, Taf. 64/15) is dated by its granulated gold earring, belt strap-end stamped of silver decorated by interlace ornament and gold coin-imitation, the burial being found amongst the VIth grave group which is dated to the Middle phase (Kiss 2001, 94–95).

520 Grave No. 128 from the Komárno Shipyard is dated by its gilded disc-shaped belt-mounts cast of copper alloy and hat-phalerae to the beginning of the Late phase (Trugly 1993, 207–209). Grave No. 131 from the same site is dated by its shield-shaped belt-mounts cast of copper alloy covered by tendril-ornament (Trugly 1993, 213–214).

521 Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2. 143–147, Abb. 3–5); Ozora–Tótipusztá grave No. 1 (Wosinsky 1896, 1000–1008. Taf. 252–254; Hampel 1897. II. LV–LVII.



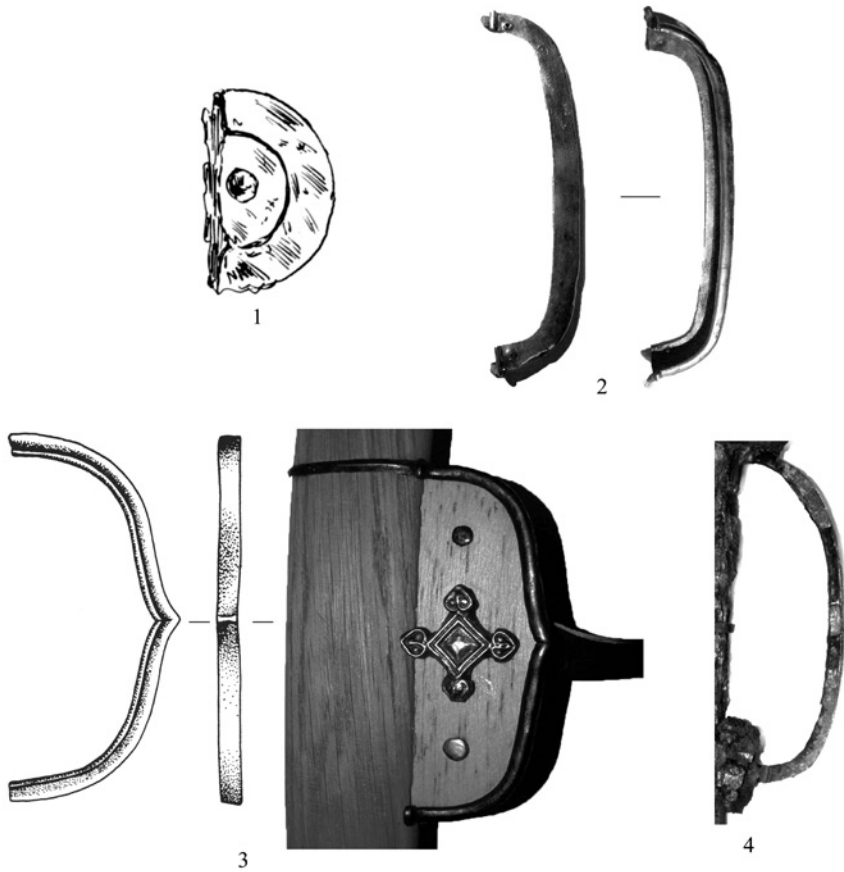


FIGURE 104 1. Pókaszepetk–Mesterföldek grave No. 332 (Sós – Salamon 1995, 166–167, Pl. xx.); 2. Komárno–Shipyard grave No. 128 (Trugly 1993, 206, Taf. xxxv/1); 3–4. Gyenesdiás–Algyenes, grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5 (photos by the author).

similar suspension loops are known from the Altay Mountains and date to the 9th century from the site of Srostki.<sup>522</sup> However, the great chronological and geographical distance between them makes any direct connection between the sabres of the Carpathian Basin, dating to the second half of the 7th century, and this south Siberian artefact extremely unlikely. Both of the known examples of this loop type were found in coin-dated burials: a solidus of Constans

táblák; Hampel 1905, III, Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61, Taf. 62/8).

522 This suspension loop was first compared to that from Srostski by Nándor Fettich (1937, 61, xxxi. tábla). See: (Zakharov – Arendt 1935, VIII. tábla; Khudiakov 1986, 191). The loop is similar to that of a single-edged sword from Nishapur (Allen 1982, 208).

II and Constantine IV, minted between 654 and 659, were found in the grave of Gyenesdiás,<sup>523</sup> while the burial of Ozora–Tótipusztza is dated by a solidus of Constantine IV (668–685), was minted between 668 and 673.<sup>524</sup> Both burials are of considerable significance for the chronology of the Middle phase.

Not only the the edges of suspension loops of type 'S.5.b–c' were decorated, but also their central part. A square standing on its corner was used for this purpose, the corners of which were decorated with small leaf-shaped projections.<sup>525</sup> All of the examples from known archaeological contexts were found on the suspension loops of sabres with star-shaped crossguards covered with gold or silver foil (CG.5.a).<sup>526</sup> All of these examples were found in Transdanubia,<sup>527</sup> and are dated to the Ozora – Igar horizon of the Middle phase.<sup>528</sup>

D-shaped edge coverings made of iron (S.5.d) are a semicircular or elongated D-shape, and their cross section is U-shaped (fig. 104/4).<sup>529</sup> Only the outer edge of the loops were reinforced by iron bands. The type is known from both sabres and single-edged swords. The type is common, with 15 examples, and are mainly from the Great Hungarian Plain (ten specimens), though examples are known from the northern shore of the Danube and the Ipoly Valley. These suspension loops are mainly characteristic of the Middle phase but

523 Müller 1989, 147. Abb. 13.

524 Bóna 1982–83, 114; Garam 1992, 146.

525 The position of this mount was observed during the excavation of grave No. 64 at Gyenesdiás (Müller 1989, 144–145). Similar mounts from the 111rd find of Igar were reconstructed as part of the belt by Gyula Fülöp (1987, 17. 8. ábra). The example from grave No. 11 at Dunaújváros (Garam 1994–95, 146. 15. kép 4–7) and Keszthely (Garam 1991a, 12. kép).

526 Gyenesdiás (Müller 1989, 144–145) and Igar (Fülöp 1987, 17. 8. ábra).

527 Dunaújváros (Garam 1991a, 12. kép); Gyenesdiás (Müller 1989, 144–145), Igar (Fülöp 1987, 17. 8. ábra) and Keszthely (Garam 1991a, 12. kép).

528 Garam 1991a, 152–153.

529 Berettyóújfalu – Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16); Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 79 (Eisner 1933, tab. 91/1; Eisner 1952, 25, Obr. 13/1); Jászapáti–Nagyállás út grave No. 76 (Madaras 1994, 32, 137, Taf. XI/5); Kisköre–Halastó grave No. 32 (Garam 1979, 13–15. Taf. 9. Taf. 29/3); Komárno–8 Shipyard grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/13); Szeged–Fehértó A grave No. 159 (Madaras 1995b, 31, Pl. 20/8); Szeged–Fehértó B grave No. 29 (Csallány 1946–48, 352–353; Madaras 1995b, 140, Pl. 5/17); Szeged–Fehértó B grave No. 113 (Madaras 1995b, 148, Pl. 19/9); Tiszafüred–Majoros grave No. 186 (Garam 1995, 28–30, Abb. 11. Taf. 73. Taf. 174/10); Tiszafüred–Majoros grave No. 257 (Garam 1995, 37, Taf. 177/1); Tiszafüred–Majoros grave No. 326 (Garam 1995, 46, Abb. 19, 47, Taf. 177/2); Tiszafüred–Majoros grave No. 496 (Garam 1995, 65, Abb. 27. Taf. 179/2); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21); Želovce grave No. 167 (Čilinská 1973, 65, Taf. XXIX/1); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1).

continued in use during the first half of the Late phase before disappearing by the second half of the 8th century.

### 3.2.3 Triple-arched Suspension Loops (S.6)<sup>530</sup>

Triple-arched suspension loops were partly made of silver, being either cast<sup>531</sup> or stamped,<sup>532</sup> though most were made of gold foils.<sup>533</sup> Their shape is triple-arched, the central semicircular projection being longest (map 52, fig. 97). They

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- 530 Bócsa (Fettich 1937, 123. taf. CXIX. 1; Fettich 1951, 71. Taf. LI; László 1955, 228–230, XLIII. T. 1. 11–12. XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57. Taf. 4–21); Csengele–Jójárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a, II. tábla; Simon 1991, 290, 15. kép 8); Kecel–Schwacho föld (László 1955, 232–233, fig. 64. LI–LII. t. LIII. t. 25; Biczó 1984, 27. 56. 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137–138, Taf. 4–5); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII); Mandélos (Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1; Pl. III/1–3; Mrkobrad 1980, 152. LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); Szegvár–Oromdűlő grave No. 335; Szegvár–Oromdűlő grave No. 540; Szegvár–Oromdűlő grave No. 903; Tiszaalpár–Tiszaújfalu (Fettich 1926a, 8, fig. 21; Simon 1991, 307, 15. kép 7); Tiszaalpár–Várdomb grave No. A (Fettich 1926a, 8, Pl. x/26; Bóna – Nováki 1982, 25, 98; Simon 1991, 308, 15. kép 3); Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2).
- 531 Mandélos (Ercegović – Pavlović 1973–74, 108, fig. 1. I. t. 1; Pl. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10).
- 532 Csengele–Jójárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a, II. tábla; Simon 1991, 290, 15. kép 8); Szegvár–Oromdűlő grave No. 335, 540 and 903; Tiszaalpár–Tiszaújfalu (Fettich 1926a, 8, fig. 21; Simon 1991, 307, 15. kép 7); Visegrád, Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2) (6 examples).
- 533 Bócsa (Fettich 1937, 123. taf. CXIX. 1; Fettich 1951, 71. Taf. LI; László 1955, 228–230, XLIII. T. 1. 11–12. XLIV–XLV. T. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57. Taf. 4–21); Kecel–Schwacho föld (László 1955, 232–233, fig. 64. LI–LII. t. LIII. t. 25; Biczó 1984, 27. 56. 173. lh.; Simon 1991, 294, 15. kép 2); Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294); Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137–138, Taf. 4–5); Kunszentmiklós–Bábonny grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII); Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); Tiszaalpár–Várdomb grave No. A (Fettich 1926a, 8, Pl. x/26; Bóna – Nováki 1982, 25, 98; Simon 1991, 308, 15. kép 3).

were decorated with various methods: glass inlay (fig. 97/4–6),<sup>534</sup> the Animal Style II (fig. 97/4),<sup>535</sup> granulation<sup>536</sup> (fig. 97/2–3) and pearl-frame (fig. 97/1–2, 5–6).<sup>537</sup> This type of suspension loop was only used on ring-pommel swords (E.I.C/2.b, E.II.B/2.a–b). The main distribution area was the Danube-Tisza interfluvium and to a lesser extent in the Transisya region. The type is unknown from Transdanubia.

These suspension loops are dated to the Early phase. Two coin-dated burial assemblages are known: the Kunágota burial was dated by a solidus of Justinian,<sup>538</sup> while the hoard of Malaja Pereshchepina is dated by a chain made of Byzantine solidi, comprised of solidi of Constans II (641–668) which were minted between 641 and 647.<sup>539</sup> This find can be dated to the middle of the 7th century. The find of Bócsa and its horizon with pseudo-buckles is dated to the second third of the 7th century, but most researchers regard it as a part of the Early phase.<sup>540</sup>

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- 534 Suspension loops of this type were decorated with garnet – (Bócsa: Heinrich-Tamáška 2006a, 94), or greenish blue glass inlay (Kunbábony and Nagykőrös: Heinrich-Tamáška 2006a, 144, 152) in a rhombic shape. Glass inlay decoration can also be observed on the suspension loop of the sword from Malaja Pereshchepina (Werner 1984a, 26).
- 535 Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230, XLIII. t. 1, 11–12, XLIV–XLV. t. 1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21). For suspension loops decorated in Animal Style II, see: (Heinrich-Tamáška 2006b, 578).
- 536 The loop of Kunbábony (H. Tóth – Horváth 1992, 32–34, Taf. V–VIII) was granulated between the glass inlays, while in the case of Kecel (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25) and Tiszaalpár (Fettich 1926a, 8. fig. 21; Simon 1991, 307, 15. kép 7) granulation of rhombic shape was observed, a close analogy for which was found in the hoard at Voznesenka which is dated to the second half of the 7th century (Komar 2006, 96, 131, Gavritukhin 2005, 406–411; Gavritukhin 2008, 82–85).
- 537 Kunágota (Garam 1992, 137–138, Taf. 4–5); Kunbábony (H. Tóth – Horváth 1992, 32–34, Taf. V–VIII); Kecel (László 1955, 232–233, fig. 64, LI–LII. t. LIII. t. 25); Nagykőrös (Simon 1983, 9–43, 6–20, kép, II–VII. t.), Malaja Pereshchepina (Werner 1984a, Taf. 29/6; Komar 2006, 22, Ris. 3/11).
- 538 The Kunágota burial was dated by a light solidus minted between 545 and 565, this coin being taken at face value (Bóna 1982–83, 88–89; Garam 1992, 137–138), whilst others have rejected the chronological value of the Justinian coin and date it to the second half of the 7th century by way of its archaeological context instead (Kiss 1991, 67–84), resulting in much debate in Avar archaeology (Garam 2001, 123).
- 539 The Pereshchepina find contained two coins of Maurice, one of Phocas, six of Heraclius and Heraclius Constantine (613–631), 41 of Heraclius and Heraclonas (632–641) and 18 Constans II (641–668) (Werner 1984a, 17).
- 540 Garam 1993a, 25. Some archaeologists already regarded it the beginning of the Middle phase, though it is merely a terminological issue, since the absolute chronology of the

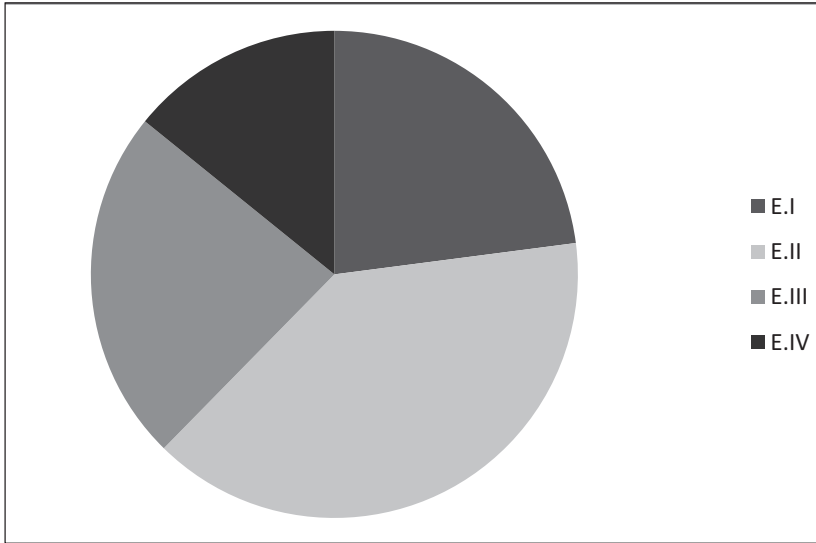


DIAGRAM 8 *Proportions of blade types of Avar-age edged weapons.*

Origins and cultural contacts of the above enlisted suspension loops will be described in chapter VI.1 in detail.

#### 4 Conclusions

More than 80% of the known corpus for edged weapons (582 examples, 82.67%) were suitable for classification, though it should be noted that in many cases (24 examples) only the sword fittings survived (such as the gold or silver coverings for the hilt, the scabbard or the suspension loops), and therefore this number can be regarded as largely representative.

Amongst these 582 edged weapons, 132 (22.68%) were double-edged swords, 236 (40.55%) are single-edged swords, 136 (23.36%) have been classified as sabres and 78 (13.4%) as seaxes. The proportion of different blade types, however, was not evenly represented across the Avar Age, with significant developments occurring throughout the period. Most of the double-edged swords are dated to the Early phase, whilst the majority of sabres and seaxes are dated to the Middle and Late phases.

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beginning of this horizon is in the 620s in their opinion (Martin 2008, 167; Gavritukhin 2001, 154–155; Gavritukhin 2005, 406–411; Gavritukhin 2008, 82–85).

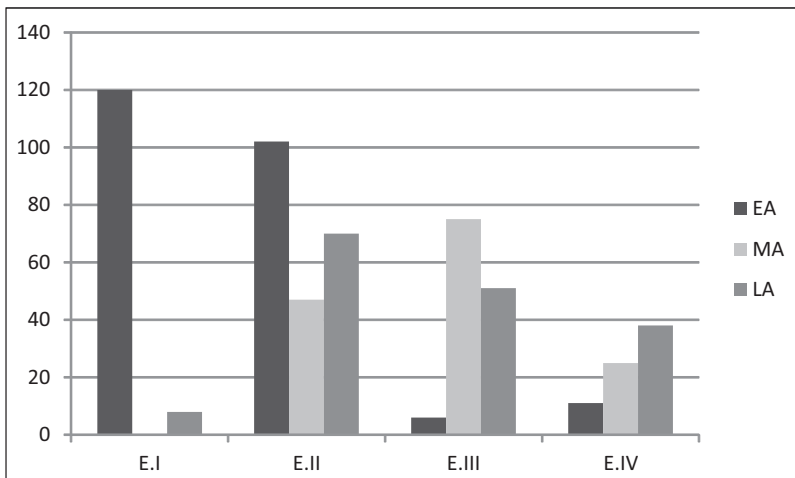


DIAGRAM 9 *Chronological distribution of major blade types of Avar-age edged weapons.*

The chronological changes of these various blade types is shown in the following diagram.

The Early phase is characterised by a predominance of double-edged swords.<sup>541</sup> The great number of weapons of form-group 'E.1' is not surprising, as at the beginning of the Early phase only double-edged swords were used by the Avars. The number of single-edged swords is similarly high,<sup>542</sup> these weapons becoming increasingly popular during the Early Avar period and by its end they outnumbered the double-edged blades. The development of sabres begun at the end of this period, while seaxes only played a secondary role (map 24).<sup>543</sup>

Far fewer edged weapons are known from the short, transitional Middle phase which is characterised by a lack of double-edged blades and a predominance of sabres with curved blades (map 25).<sup>544</sup> Straight single-edged blades also remained popular during this period,<sup>545</sup> a considerable number of which were equipped with crossguards.<sup>546</sup> The significance of seaxes appears to have

541 120 examples, 50.4% of the examined Early Avar artefacts.

542 102 examples, 42.48% of the examined artefacts.

543 The short seaxes were a secondary weapon beside spathae, though broad seaxes already appeared at the end of the Early phase as real edged weapons.

544 75 examples, 51.02%.

545 47 examples, 31.97%.

546 67 edged-weapons from the Middle phase were equipped with crossguards (45.5%) compared to the 26 Early Avar crossguards (10.92%).

increased during this phase, based on the increase in their number, coinciding with the development of broad seaxes ('Breitsax') and changes in their blade shape.<sup>547</sup>

These proportions changed significantly during the Late phase: the majority of edged weapons dating to this period are represented by straight single-edged swords (mainly with crossguards),<sup>548</sup> whilst the rate of sabres decreased,<sup>549</sup> and the significance and number of seaxes reached their peak (map 26).<sup>550</sup> The few double-edged swords from the 8th century are probably imports of western or Byzantine origin.<sup>551</sup>

The following trends may be observed from this chronological distribution:

- 1 the single-edged swords successively outnumbered the double-edged during the Early phase;
- 2 the sabres with curved blade developed from straight single-edged swords;
- 3 the significance of seaxes increased continuously.

The first of these trends was probably a consequence of the change in sword suspension. The spread of two-point suspension facilitated the pulling of the sword from its scabbard, thus lighter single-edged swords superseded double-edged blades.

Single-edged swords were of triangular or pentagonal cross section, and therefore they were not suitable for thrusting. This led to the formation of the false edge which facilitated thrusting whilst not effecting the cutting mechanism of the blade.

The most significant step in this transformation of blade morphology was the appearance of the curved blade. The curvature of sabre blades can be determined by a quotient of the height of the segment and length of the line along its width. These curved blades are most characteristic of the Middle phase (second half of the 7th century) while the Late phase is characterised largely by slightly curved blades.

The blades of these edged weapons are usually not suitable for finer chronological distinctions than a century; however, their fittings and decoration, such

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547 25 seaxes (17%) are known from the Middle phase.

548 70 examples, 41.9% of Late phase edged-weapons, 30 of which were equipped with crossguards.

549 51 examples, 32.48%.

550 38 examples, 22.75%.

551 Eight examples, 4.79%.

as hilt coverings, crossguards, decoration of the scabbard or suspension loops, were subject to much more frequent change. The most significant parts of hilt decoration were the pommel, hilt caps, plate-coverings and rivets.

The most striking feature of the crossguard was its increase in frequency from the Middle phase onwards. Avar-age crossguards were highly influenced by those Byzantine crossguards cast of copper alloy which can be regarded as the predecessors of the star-shaped crossguard. The Middle phase and first half of the Late phase was characterised by a short crossguard (length of 5–6 cm), while long and straight crossguards (8–10 cm) were mainly used in the later period (second half of the 8th century).

The suspension loops are also important chronological indicators. P-shaped suspension loops can be divided into three types which partly reflect chronological differences. The semicircular or D-shaped suspension loops suggest continuity from the Early and Middle phase, only their manufacturing technique was different.

The trends we have outlined partly reflect changes in fighting methods and warfare, in particular suggesting the growing importance of light cavalry. Imported weapons were only used when they could be used on the basis of local Avar fighting methods.



## Technology—Manufacturing Techniques

Unfortunately technological, in particular metallographic, examination has not played a significant role in Avar archaeology, partly due to the lack of interest but also as a consequence of both the cost of the approach and for a lack of relevant expertise. Consequently, very few weapons have been analysed using such methods, few results have been published, and their results has not yet been used by most archaeologists, despite the fact that the results of such examinations can offer relevant information on the use, quality and the general technical history of artefacts.

Besides the forging, several other technical methods were used during the manufacture of swords, as these weapons were also decorated with various jewellery techniques, and therefore the complete manufacture of a sword might include blacksmithing, wood carving, leatherworking and jewellery work. These latter techniques, however, will not be described here. Forging techniques were described in the methodology chapter and therefore we intend to offer here a summary and interpretation of the results of former metallographical examination of Avar-age polearms and edged weapons.

Metallographic examination has rarely been made of Avar-age artefacts. One of the main researchers in this field has been the Czech scholar Radomír Pleiner who examined the use of iron, including ore extraction, mining, smelting, and the various forging techniques of early medieval blacksmiths. Pleiner mainly focussed on the work of Moravian blacksmiths which included a description of the manufacturing techniques applied to a sabre from the Late Avar burial of Holiare.<sup>1</sup> Significant metallographic analyses were also made of iron artefacts from the Early Avar period Környe cemetery by the Polish researcher Jerzy Piaskowski.<sup>2</sup> The Košice Technical University has played a significant role in the archaeo-metallographical study of Avar weapons, and Ľubomír Mihók and his team examined several artefacts from the two great Avar cemeteries in Slovakia, at Želovce<sup>3</sup> and Košice-Šebastovce.<sup>4</sup>

Metallographic examination of weapons have been carried out quite frequently in Austria thanks to the research activity of Erik Szameit, the Vienna

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1 Pleiner 1967, 90.

2 Piaskowski 1974, 113–130.

3 Mihók et al. 1991, 67–101.

4 Mihók et al. 1995, 145–188.

Institute of Archaeological Science (VIAS), founded by Falko Daim, and a project financed by the Austrian National Bank<sup>5</sup> on the metallographical examination of early medieval weapons, as undertaken in the studies of Matthias Mehofer and Norbert Hofer.<sup>6</sup>

Hungarian research has been somewhat late in contributing to this field, compared to its northern and western neighbours. During the writing of this monograph X-ray and electron-microscopic investigations were carried out on spearheads from the Budakalász cemetery, in cooperation with the Metal Technological Research Group of the Budapest Technical University,<sup>7</sup> while CT and electron-microscopic analyses were made on swords from the Szegvár–Oromdűlő cemetery and spears from the Budakalász cemetery by the Széchenyi University of Győr.<sup>8</sup> The Hungarian National Museum also examined iron artefacts of Merovingian (and partly Avar) origin under the auspices of the European Union project termed ‘ANCIENT CHARM EU’<sup>9</sup> by means of PGAA and TOF, based on neutron diffraction.<sup>10</sup>

Only 30 edged weapons and polearms have been examined metallographically,<sup>11</sup> this small number being partly as a consequence of its expensive

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- 5 Project No. 9394, with the title ‘Metallographische Untersuchungen an Schutz- und Angriffswaffen des Mittelalters’.
  - 6 Publications from this project: on the Holy Lance of Vienna: Mehofer – Leusch – Bühler 2005; artefacts from Upper Austria: Mehofer – Szameit 2003, 127–169; the metallography of the sword of Hohenberg: Mehofer 2005, 251–253; reconstruction of the Hohenberg sword: Scheiblechner 2005, 255–267; the metallography of the early Hungarian sabre of Gnadendorf and the Avar sabres of Zillingtal: Mehofer 2006, 159–174.
  - 7 I am indebted to the head of the research group, Dr. János Dobránszky.
  - 8 Spearheads from grave Nos. 291, 437, 710 and 1472 at the Budakalász–Dunapart cemetery, and swords of grave Nos. 137, 333, 335, 540 and 930 at the Szegvár–Oromdűlő cemetery. These investigations were carried out by the Materials Science Laboratory Széchenyi István University in Győr by Csizmazia Ferencné.
  - 9 These are abbreviations for ‘Analysis by Neutron Resonant Capture Imaging and other Emerging Neutron Techniques Cultural Heritage and Archaeological Research Methods’, see: <http://ancient-charm.neutron-eu.net/ach>.
  - 10 The Hungarian coordinator of this project is Zsuzsanna Hajnal, and am grateful to her for this information.
  - 11 The examined weapons were: a sabre from grave No. 102 at Holiare (Pleiner 1967; Pleiner 2006, 207, fig. 68), the sword of Hohenberg (Mehofer 2005, 251–253), the sabres from grave Nos. B-23 and D-330 and the single-edged sword from grave No. D-3 at Zillingtal (Mehofer 2006, 162–163), the sword of Dabas/Gyón-Paphegy (Simon – Székely 1991, 204), Csolnok (Somlósi 1988, 207–210), the swords from grave Nos. 78, 97 and 149 at Környe and two swords (stray finds from Környe) and two spearheads (grave No. 129 and stray find) from the same cemetery (Piaskowski 1974, 128), 8 edged-weapons from the Želovce cemetery

cost and the destructive nature of the sampling methods.<sup>12</sup> In spite of the small size of the sample the variability of the weapons examined offers significant and relevant new information on Avar-age blacksmithing techniques and the efficacy of these weapons. Such technological observations can be made using not only special scientific methods and equipment but also by macroscopic examination of the artefacts.

Following the structure of the current study, the technological characteristics of the polearms will be described first, followed then by the edged weapons. Unfortunately, spearheads are even less well understood technologically than that of edged weapons but some useful information has been gained by simple macroscopic examination. However, a historiographical question of some technological relevance should be first discussed: the supposed 'good quality' (in terms of good preservation) of the Early Avar reed-shaped spearheads with connecting chap and grid-patterned rings (P.I.A.).<sup>13</sup> Various theories have been suggested to explain the preservation of these weapons, such as their Inner Asian<sup>14</sup> or Byzantine origin,<sup>15</sup> as well as the contribution of various manufacturing techniques, such as secondary burning,<sup>16</sup> casting<sup>17</sup> or die forging.<sup>18</sup> None of these theories paid attention to the results of the metallographic examination, such as that by Jerzy Piaskowski of the spearhead from grave No. 129 at Környe.<sup>19</sup>

The question of origins will be discussed later but the theory of secondary burning and die forging are technological questions. During such secondary burning the crystal structure of an iron artefact radically changes, and in the case of slow, natural cooling there is a reduction in carbon content and the deconstruction of martensite which results in a soft iron and the easy bending and deformation of the artefact. Such secondary burning of artefacts would

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(grave Nos. 78, 124, 126, 235, 311, 335, 442 and 818) (Mihok et al. 1991, 67–101), three spearheads and one sabre from Košice-Šebastovce (spearheads from grave Nos. 221, 238 and 321, and a sabre) (Mihok et al. 1995, 145–188).

12 Traces of sampling were observable on weapons from Környe and Šebastovce, while the sabres of Zillingtal were restorated after sampling.

13 Good quality and good preservation of iron artefacts are not equatable. Good preservation of an iron artefact can be the result of various factors, like the type of soil, the age of the artefact and its original metal structure.

14 Kovrig 1955a; Kovrig 1955b.

15 Von Freeden 1991, Schultze-Dörlamm 2006.

16 Bóna 1971a, 240 (24); Bóna 1980, 47–48; Csallány 1953.

17 Bálint 1993, 196.

18 Tomka 2008, 249.

19 Piaskowski 1974, 123–124.

mean that they could no longer be used as weapons. Moreover, secondary burning also leaves traces of nitrites on the surface.<sup>20</sup> Consequently, secondary burning could not result in the sort of preservation or features described by Dezső Csallány and István Bóna<sup>21</sup> but rather their opposite.

The theory of iron casting and die forging also emerged in connection with these spearheads (P.I.A) and stirrups with rectangular loops. Iron casting spread relatively late during the 18th century in Europe, while it was already known in China around 500 BC during the period of the Warring Kingdoms. Originally the technique of iron forging was unknown in Ancient China. This iron casting could result in the mass production of iron artefacts in China, creating a large amount of identical and relatively simple artefacts. It was mainly used for casting vessels and bells but agricultural tools were also produced by use of this method. Over time, the use of forging appeared alongside iron casting, as a result of which weapons begun to instead forged.<sup>22</sup> Iron casting was also known in Inner Asia, with cast iron cauldrons being used by the Xiongnu.<sup>23</sup>

The question of forging or casting is only to be solved by metallographic analyses of such iron artefacts. Unfortunately, the only spearhead examined is that from grave No. 129 at Környe. This spearhead was made of an iron of low phosphor and uneven carbon-content, its crystal structure being fine with ferrite-pearlitic structure, while its carbon content is low: only 0.7 %.<sup>24</sup> The spearhead was of good quality but relatively simple structure, having been forged, with cementation used as a surface treatment. The material of this spearhead is similar to that of the stirrup with rectangular loop from the same burial. Piaskowski even supposed the same bloomery workshop where the

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20 The physical characteristics of secondary burning are described by Radomir Pleiner (2006, 69). This phenomenon can be observed on weapons burnt on a pyre together with the deceased, with such weapons usually being bent (Williams 2005, 260–264).

21 Presumably this theory based on the confusion of cementation with secondary burning (Bóna 1971a, 240).

22 In fact, the technology of bronze casting was developed further by iron casting in China. Iron casting was already known in the 5th century BC in China, melting iron-ore at higher temperatures than in contemporary Europe due to its high carbon-content. (Needham 1958; Barnard 1961; Needham 1964, 398–404; Rostoker – Bronson – Dvorak – Shen 1983, 196–210; Wagner 1992, 335–361).

23 Such a bucket-shaped cast iron cauldron was found in the Xiongnu cemetery of Egiin Gol. A cast iron vessel was found during the French excavations of Gol Mod in 2006 (Törbat et al. 2003, 152, 235).

24 Piaskowski 1974, 122. Iron casting can be excluded by the low carbon-content of the artefacts, since cast iron object are usually of high carbon-content (Wagner 1992, 336).

bloomers did not carbonize the pig-iron by its casting.<sup>25</sup> All the data above (low carbon content and ferrite-pearlitic structure) reveal that these artefacts were forged of pig-iron contradicting the idea of iron casting.

These iron artefacts were of good quality, accounting for their well preserved state, rather than because of their casting or die forging manufacturing technique. As for the connecting chap, die forging was not necessarily used in its manufacture since it could be made by shouldering. One of the major characteristics of die forging is standardised, serial production, whereas connecting chaps are actually of various shape and size, contradicting a theory of die forging.

Metallographic examination can also offer important information on the origin of spearheads of Merovingian origin as represented by the Dorfmerking type spearhead (P.III.D) from the Környe cemetery. This spearhead was made from iron of low carbon and phosphore content, which characterises Piaskowski's first group together with that of the umbo from grave No. 66 at Környe. The material of a bearded axe ('*Bartaxt*') from grave No. 125 was also composed of similar material, though its surface was cemented.<sup>26</sup> Probably it is not by chance that all of the artefacts showing similar technical characteristics are of western, Merovingian origin and their material differs significantly from that of reed-shaped spears.

An interesting technical feature has been observed on the Early Avar spearhead from grave No. 437 at Budakalász where according to electron-microscopic analysis the socket was soldered together by copper. This technique was also described by Theophilus Presbyter.<sup>27</sup>

Unfortunately very few metallographic examinations have been carried out on Late Avar spearheads, with all of the studied weapons coming from the cemetery at Košice-Šebastovce. L'ubomir Mihók examined three spearheads (from grave Nos. 221, 238 and 321) of different types: triangular (P.IV), lenticular (P.III) and conical (P.II) spearheads having been analysed respectively. According to the metallographic data, the spearhead from grave No. 221 was made of iron of poor quality: it was made of two different groups of raw material, as shown by the welds, one of which had a coarse ferritic structure and the other being fine and pearlitic.<sup>28</sup>

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25 Piaskowski (1974, 123–124) classified these artefacts to his 2nd group. He listed its analogies from central Poland.

26 Piaskowski 1974, 122–124.

27 Theophilus 1986, 145–146; Brephols 1987, 291.

28 Mihok et al. 1995, 151–153.

The pattern welding of the spatha blades in early medieval Europe was a common technique used mainly for improving the elasticity of the blade. The quality of these blades could be identified and judged by the naked eye, on the basis by its pattern. The examination of pattern welding is important not only for judging the quality of the blade itself but also for its chronological significance. Ursula Koch observed that different patterns were used on spatha blades of various phases in the Schretzheim cemetery,<sup>29</sup> and she dated the pattern welding to the 5th–6th South Germanic phase.<sup>30</sup>

The study of pattern welding has a great tradition in Merovingian archaeology, though its full examination requires the application of expensive methods. Various methods used in its study include the cleaning and etching the blade by acids, during which the high-carbon steel is damaged and leaves grooves on the blade showing the original pattern.<sup>31</sup> This invasive method was mainly characteristic of the research undertaken in the 1960–70s and was largely abandoned under pressure from conservators because it damaged the artefacts.

The classic method of metallographic study is by sampling, polishing and microscopic examination. A radical approach to such examination is the method of Stephan Mäder who used the knowledge of Japanese sword polishers, in polishing the whole surface of the blade so as to make the original pattern of the blade visible.<sup>32</sup> This method has proved highly divisive, since it can only be used on less corroded blades and damages the whole artefact.

Very few metallographic analyses have been carried out on Avar-age weapons which is the reason there is only six studied examples of pattern welding. The blade from grave No. 1 at Kehidakustány—Kehida – Központi Tsz. Major was manufactured by a pattern welding of fishbone-pattern,<sup>33</sup> an analogy of which is dated to the first half of the 7th century from the Schretzheim cemetery.<sup>34</sup> This pattern welding method was common in Merovingian Europe. Three examined swords from the Környe cemetery, the double-edged sword from grave No. 97 and two stray finds (one of them a spatha with pommel cast of copper alloy) were pattern welded, and Piaskowski observed several layers of various iron and steel components.<sup>35</sup> Pattern welding is therefore not

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29 Koch 1977, 98, Taf. 182–188.

30 Koch 2001, 84.

31 Böhne – Dannheimer 1961, 107–122; Ypey 1982b, 381–388.

32 Mäder 2000, 17–27; Mäder 2002, 277–285; Mäder 2004, 23–31.

33 Szőke 2002, 77, 9/E.

34 Koch 1977, 98.

35 Piaskowski 1974, 123.

only characteristic of spathae but can also be observed on other double-edged swords.

Single-edged swords of the Early phase were usually manufactured by use of simpler methods. These weapons were usually cemented, like the sword of Dabas which has a surface that is rich in high-carbon cementite despite being made of a single iron rod.<sup>36</sup> A similar feature was observed on the sword from grave No. 149 at Környe, the blade of which was also cemented.<sup>37</sup> The secondary cementation on the blade of a single-edged sword from grave No. 78 at Környe is not obvious in spite of its high carbon content.<sup>38</sup>

Most of the examined sabres were of even more primitive manufacturing: according to the observations of Matthias Mehofer, the sabres from Zillingtal were made of a single iron rod, and were not cemented or cooled, with hardening by cooling of the tip shown to have occurred on only one of the examined sabres.<sup>39</sup> The sabre of Holiare was produced by a more complex technique, using two different iron rods and forge welding, the edge of the blade being made of high-carbon steel.<sup>40</sup> Matthias Mehofer described these sabres as being fragile and of low quality compared to that of the pattern welded spathae.<sup>41</sup>

The broad seax ('*Breitsax*') of Želovce was examined metallographically by L'ubomír Mihók who observed significant differences in the manufacturing technique of sabres and this seax, despite being from the same site, suggesting different workshops.<sup>42</sup> It is important to note that these studies are few in number and that their relevance and representativity can only be improved by the systematic examination of whole series of weapon types.

Summarising the examples discussed above, it is clear that mostly simple forging techniques were used by Avar-age blacksmiths. Most of the weapons were not of a particularly good quality, although some high quality artefacts are known, some of which could have been imported.

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36 Simon – Székely 1991, 204.

37 Piaskowski 1974, 123.

38 Piaskowski 1974, 123.

39 Zillingtal grave No. D 338 (Mehofer 2006, 170–171).

40 Pleiner 1967; Pleiner 2006, 207. fig. 68.

41 Mehofer 2006, 173.

42 Mihok et al. 1995, 72–73.



## Chronology—Continuity and Discontinuity

The polearms and edged weapons have been discussed together, from the beginning of the Avar Age (568) until its end (first half of the 9th century), so as to examine the development of these weapons from a diachronic point of view. The chronology of different form-groups, types, subtypes and variants, was described in the above chapter on the classification of polearms and edged weapons. This chapter will therefore address more general chronological observations. The chronological relationship of the different types, subtypes and variants are represented in the three chronological tables.

One of the major chronological characteristics of Avar-age polearms and edged weapons is the apparent lack of definitive boundaries between periods: several types or variants are dated to the transition between two chronological phases, whilst some types were even used throughout the whole Avar Age, from its beginning until its end. It is important to note that some weapons (mainly their blades) and their fittings were not used for the same timespan, with blades usually covering a longer timespan, whilst their decoration can be dated to shorter periods.

The main difficulty of Avar chronology in general, and in particular the dating of its characteristic artefact types, is the small number and uneven distribution of coin-dated burial assemblages: all of them are dated to the Early and Middle phase,<sup>1</sup> while no such burial is known from the Late phase which covers at least 150 years. However, the weapons can often be dated by association with belt-sets or horse harness which can occur as part of the burial assemblage. Although the relative chronology of the Avar Age is well developed, significant shifts are possible in terms of its absolute chronology.

### 1 Early Avar I. (568–620s)

The beginning of the Avar Age was in many respects a period of significant change in the Carpathian Basin, such as the appearance of several formerly unknown artefact types. However, some artefacts that were characteristic of

1 The earliest dated coin found in an Avar burial was the Kunágota find, with a coin of Justinian (Somogyi 1997, 59–60), and the latest was a solidus of Constantine IV minted between 668 and 673 from Ozora–Tótipuszta (Somogy 1997, 71–72).



earlier periods (like the age of Gepid and Lombard kingdoms of the early 6th century) did survive the Avar conquest. Such chronological continuity can be observed in the case of reed-shaped spearheads with long blade (P.I.B/1, fig. 22), a type which had already appeared in Lombard and Gepidic burials before 568,<sup>2</sup> and the broad lenticular spearheads with long blade and short, closed sockets (P.III.A/1.e, fig. 37–43) which were also known from Lombard cemeteries before the Avar conquest.<sup>3</sup> The continuity of edged weapons of the 6th century Germanic kingdoms can also be observed in the case of spathae (E.I.A/1.a, fig. 56–59) and short seaxes ('*Kurzsaax*') (E.IV.A.1.a, fig. 82/1–2). All of these weapon types are suggestive of the Germanic tradition of the Carpathian Basin surviving during the Early phase of the Avar Age according to both archaeological and written sources,<sup>4</sup> though the occurrence of these weapons cannot be treated as evidence of any kind of ethnic continuity.

The first half of the Early phase is characterised by the predominance of reed-shaped spearheads with connecting chap (P.I.A, fig. 14–18) and simple reed-shaped spearheads (P.I.B, fig. 25–27), though broad lenticular spearheads are also known from the same period in considerable numbers (P.III.A/1, fig. 37–43). Earlier research dated these reed-shaped spearheads with connecting chap and grid-patterned rings to the period of the Avar conquest (568) by historic interpretation,<sup>5</sup> although newer studies have suggested that a Byzantine origin is more probable,<sup>6</sup> which raises questions over its early dating.

Simple reed-shaped spears (P.I.B, fig. 25–27) remained in use continuously from the Early to the Late phase, with developments in the socket representing a chronological indicator: open (P.I.B/3.a) and clasped socket (P.I.B/3.b) and socket-wings abutting (P.I.B/3.c) are dated exclusively to the Early phase, while sockets with rings pulled over (P.I.B/3.f) were only characteristic of the Late phase. Socket-wings abutting (P.I.B/3.d) and closed socket (P.I.B/3.e) are generally used in all phases and are not chronologically useful.

The first half of the Early phase can be characterised by double-edged swords. Spathae (E.I.A/1.a, fig. 56–59) are known in great numbers from Transdanubia and Transylvania but double-edged blades of lenticular cross section (E.I.B,

2 See Bóna 1978, 157–158.

3 From Lombard burials: Vörs grave No. 3; Kajdacs grave No. 31; Maria Pongee; Szentendre grave No. 44; Sedriano-Rovena; Testona (Bierbrauer 1991, 34, fig. 11) Their chronology in Germany: (Schretzheim I–III. phase: 545/550–590/600 (Koch 1977, 37, 109–110); South German 5th phase: 530–600 (Koch 2001, 62, 75).

4 See chapter 1.1.c.

5 Kovrig 1955a, 40; Kovrig 1955b, 190–192).

6 von Freedon 1991, 621–623; Schulze-Dörlamm 2006, 488. 494–497.

fig. 61) were also used. Double-edged swords with crossguards can be regarded as an early type (E.I.B/2.a, fig. 62) since it correlates with cast Martynovka type (or masque type) belt-mounts.<sup>7</sup> The spatha suspension decorated by animal heads (S.1) from grave No. 97 at Környe<sup>8</sup> is dated to this period but pyramid spatha buttons (S.2) had also already appeared during this phase (fig. 104).

## 2 The Turn of the 6th–7th Century

The turn of the 6th–7th century is not a generally recognised chronological turning point, despite significant changes happening during that time, including the appearance of several new types during this phase. The late variant of reed-shaped spearheads with connecting chap (P.I.A/3.d, fig. 18) and the first conical spearheads (P.II.A/3, fig. 33) appeared during this time. The use of broad lenticular spearheads (P.III.A, fig. 41–42) continued, but its late variant with narrower blade and of small size (P.III.B/1.d, fig. 45–47) appeared and remained in use until the end of the Early phase. The spearheads with central ribs (Dorfmerking type, P.III.D, fig. 50) and openwork spearheads (P.III.E/1.e, fig. 51/1) appeared during this phase in cemeteries as a consequence of strong Merovingian influences from eastern Transdanubia.

Significant changes also occurred in the types of edged weapons at the end of the 6th and beginning of the 7th century. Single-edged swords without crossguards (E.II/1, fig. 68) appeared and begun to spread at about this time. The use of double-edged blades continued, but became rarer and had disappeared entirely by the end of the Early phase. Double-edged swords of lenticular cross section (E.I.B/2.b) and crossguard cast of copper alloy (CG.4.a, fig. 62) are also dated to this period and can be regarded as Byzantine imports.

The formation of two-point sword suspension (and thus P-shaped suspension loops [S.4]) could have already started during the last decades of the 6th century, but they only became popular during the beginning of the 7th century (figs. 100–102). The first variant of P-shaped suspension loops could have been the loops with short, curved projections (S.4.a, fig. 100) known from the last quarter of the 6th century but the later variant with long, straight projection (S.4.c, fig. 102) followed it not much later, around the early decades of the 7th century.<sup>9</sup>

7 Somogyi 1987, 121–122.

8 Salamon – Erdélyi 1971, 23, Taf. 15/31–32.

9 See the Phocas solidus from grave No. 2 at Kiszombor O cemetery (Garam 1992, 142; Somogyi 1997, 53).

### 3 Early Avar II. (610–650)

The Early Avar period marks significant changes in its material culture with the formation of the so-called Bócsa – Kunbábony horizon by the 620–30s. These transformations mainly concentrated on belt-sets and to a lesser degree polearms but some changes occurred, like the spread of reed-shaped spearheads with long socket and short blade (P.I.B/2, fig. 23–24) and the appearance of conical spearheads with extra narrow blades (P.II.B/1, fig. 35–36). Both of these types were used continuously throughout the Middle phase.

Significant transformations also occurred in the case of edged weapons. The beginning of the development of ring-pommel swords (E.I.C and E.II.B) cannot be easily determined but their height was during this phase (Bócsa—Kunbábony horizon, figs. 63 and 71–72). By the last decades of the Early phase there were significant changes to the blades of single-edged swords as they already show some features of early sabres, like false edge (E.II.C, fig. 73–74) and slightly curved blade (E.III.A, fig. 75). The rhombic decoration of sword hilts had already appeared during the Early phase, previewing similar decorative rivets on the hilt of the sabres from the Middle phase. The light variant of the broad seax (E.IV.C, fig. 83) appeared contemporaneously with earliest sabres, and their use is mainly characteristic of the Middle phase. The more frequent use of crossguards (mainly of type CG.4, fig. 92) also started around this date. Besides P-shaped suspension loops (S.4.a–c, fig. 100–102), the similar semicircular loops (S.5.a, fig. 104) and the triple-arched loops (S.6, fig. 103) were used frequently. Summarising these developments, those elements characteristic of the Middle phase had already begun to appear by the end of the Early phase, clearly demonstrating that there is no sharp chronological boundary between the two periods.<sup>10</sup>

### 4 Middle Phase (650–700)

From the middle of the 7th century, and the horizon called Ozora – Igar – Gyenesdiás, there were further clearly observable changes in the material culture of the Avars.<sup>11</sup> This process is also reflected in its weaponry.

10 Continuity between the Early and Middle phases was emphasised by the study of burial customs (Tomka 1989, 171–173), and pottery (Vida 1999a, 190–191).

11 Radical changes were observed in belt-sets and women's jewellery (Bóna 1970; Garam 1976; Garam 1978; Pástor 1986), Byzantine imports (Garam 1991d; Garam 2001, 180), pottery (Vida 1999a) and burial customs (Tomka 1975; Tomka 1989; Tomka 2008). This phase

The number of spearheads drastically decreased during the Middle phase, with the types that appeared during the second half of the Early phase being used continuously. This phase is characterised by an increasing number of conical spearheads (P.II, fig. 34–35) compared to reed-shaped (P.I) and lenticular (P.III) spearheads.

The absolute predominance of sabres with curved blades (E.III) is also a characteristic feature of the edged weapons of the phase (fig. 75–81). Strongly curved blades (E.III.C, fig. 81) were popular during this period. Besides curved blades, straight single-edged blades (E.II.A, fig. 69–70) were also contemporaneous with the use of straight single-edged blades with false edge (E.II.C, figs. 73–74). Most of the edged weapons were equipped with crossguards by this period. Besides sabres and single-edged swords, seaxes became increasingly popular due to the spread of broad seaxes with long and wide blade (E.IV.C, fig. 83), but shorter and narrower blades of 30–40 cm length are also known (E.IV.B, fig. 82/3–4).

The hilts of edged weapons were decorated with various rivets with different heads (fig. 89), such as rhombic (R.2), cylindrical (R.3) and rosette (R.4). Some types of crossguards were used only during this phase (star-shaped crossguards with gold or silver covering [CG.5.a] and regular star-shaped crossguards [CG.5.b], fig. 93). Various suspension loops were used for single-edged swords and sabres, like P-shaped loops with long projection (S.4.c), elongated D-shaped [S.5.b] and ogee-shaped [S.5.c] suspension loops, the inner field of which was decorated (fig. 104). Some of these types remained in use during the beginning of the 8th century.

## 5 Late Avar I. (700–750)

Besides Middle Avar traditions, some new features appeared during the first half of the 8th century, the most significant of which was the general spread of belt-sets cast of copper alloy which were characteristic not only of the Carpathian Basin but also of Eastern Europe.<sup>12</sup>

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is also distinct in some cemeteries, such as in Tiszafüred and the 2nd–3rd phase: Garam 1995, 397–404; Leobersdorf: Daim 1987, 132–135).

12 This period is characterised by socketed strap-ends cast of copper alloy and cast belt-mount with animal representations, this period being parallel to the SPA 2 and 3 phases of the Leobersdorf cemetery (Daim 1987, Abb. 28–29) and the 4th phase at Tiszafüred (Garam 1995, 404–412).

New types of polearms appeared with this change: reed-shaped spearheads with broad shoulder (P.I.D, fig. 29), spearheads of pentagonal blade (P.I.E, fig. 30) and reed-shaped spearheads with narrow blade of quadrangular cross section (P.I.F, fig. 31–32). Significant changes also occurred in the form of lenticular spearheads. The use of narrow lenticular spearheads (P.III.B, fig. 47) continued but the proportion of the blade and socket changed, and the blade became longer. Narrow lenticular blade and its rhombic cross section (P.III.C, figs. 48–49) is a characteristic feature of the period, and can be observed on some spearheads of western origin and their local imitations (Pfullingen type: P.III.C/2 and Egling type, P.III.C/3). Spearheads with long, narrow triangular blade appeared, partly as hooked spears ('*Hakenlanze*': P.IV.A/1.e, fig. 52), and likely under western influence. The openwork spears from Transylvania can be regarded as a closed, local group (P.III.E/1.f, fig. 51/2–4). The conical spearhead became more frequent during the Late phase (P.II).

As for edged weapons, the sabres with strongly curved blades became rarer, while the sabres with slightly curved blades (E.III.A) became more common and are characteristic of this period (fig. 76). The predominance of straight single-edged swords, mostly with crossguards (E.II.A/2.a, fig. 70), is also characteristic of the Late phase. Instead of broad seaxes with wide blade and centrally placed tip, narrower and longer long seaxes were used. The sporadically known double-edged swords of western origin (E.I.A/2.a, fig. 60) are extremely rare in the Late Avar Carpathian Basin. Decoration of the hilt was not used during this period but simple star-shaped crossguards (CG.5.c–f, fig. 93), and a simple variant of short, narrow crossguard, were continuously applied (CG.4.d, fig. 92/4). Semicircular suspension loops made of iron were used during the first half of the Late phase, though their use ceased by the middle of the 8th century.

## 6 Late Avar II. (750–820?)

The male burials of the second half of the 8th century are characterised by cast two-sided strap-ends with circular flat-tendrill decoration and shield-shaped belt-mounts of similar decoration, while the end of the Late phase is characterised by the disappearance or incompleteness of belt-sets.<sup>13</sup>

13 This period is parallel with the SPA 3 phase of Leobersdorf (Daim 1987, Abb. 28) and the 5–6th phases at Tiszafüred (Garam 1995, 412–423).

In conjunction with the decreasing number of male burials with belt-sets, the number of weapon burials also diminished, though it disappeared only at the end of the period. Most of the already known spearhead types continued to be used during this period. The predominance of the reed-shaped spearhead can be observed in its later subtypes (P.I.C–F, figs. 29–32). The volume of conical spearheads (P.II, figs. 33–35) continued to rise further, however, most of the known spearhead types were no longer deposited in burials.

Straight single-edged sword blades (E.II.A/2, figs. 68–70) were predominant during the second half of the 8th century, while long seaxes with their tips at the edge (E.IV.D, fig. 84) are known in great numbers from this phase. Sabres with slightly curved blade (E.III.A, figs. 75–76) became rare. Only one double-edged sword is known from this period,<sup>14</sup> which is probably an import from southeastern Europe (Bulgaria or Byzantium).<sup>15</sup>

## 7 General Types Characteristic of Longer Timespans

Whilst the general chronological trends of the main Avar-age polearms and edged weapons have been outlined above, there are some types which cannot be dated to a short or specific period, since their attributes are too general or are characteristic of longer timespans (like centuries). Simple reed-shaped spearheads with closed socket (P.I.B/3.e, fig. 27) and single-edged swords without crossguard or scabbard decoration (P.II.A/2, fig. 67) remained in use for a considerable time, beginning with the Early phase and lasting until the end of the Late phase. The change in weapon types was clearly not even across the different periods but their main tendencies do show the rhythm of changes in respect of fighting methods.

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14 Čierny Brod I. grave 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12. Obr. 7; Zábajník 1995, No. 19).

15 Kiss 1987a, 204–205; Szóke 1992a, 95–96.

# Origins and Cultural Contacts

## 1 The East and the Steppe Lands

Contact with the east was emphasised in the research of Avar archaeology from its very beginnings but mostly without any definition of ‘Orient’ or precision as to what exactly was meant by eastern contact. The archaeology of the ‘Migration Period’ of the Carpathian Basin usually uses this term for the steppes, not recognising that the steppes region is not historically uniform, geographically nor culturally. Later some authors also included the Middle East (including Sassanian Iran), Transoxiana and the Far East, under the term ‘Orient’, many of which were also deeply influenced by the steppes, despite being basically settled civilisations. The term Orient, however, is a derivative of the 19th century perspective of ‘orientalism’, and is the opposite of European.<sup>1</sup> As well as these eastern contacts, there were also connections with the Eurasian Steppes, the oasis civilisations of Central Asia (like Transoxiana or Khorasan),<sup>2</sup> and with Sassanian and Early Islamic Iran, all of which should rightly be addressed separately.

Research on the eastern origins of Avar material culture was much emphasised in Hungarian archaeology from its beginnings, partly as a consequence of the eastern origins of the Hungarians themselves and the national mythology constructed around it, and also because according to written sources the Avars arrived in the Carpathian Basin from Inner Asia, chased by the Ancient Turks, and as a result artefact types of Inner Asian origin were usually dated to the first generation of Avars in the Carpathian Basin.

The study of the steppes in Hungarian archaeology started with the expeditions of Béla Pósta,<sup>3</sup> whose work was continued by Gyula László<sup>4</sup> and Nándor Fettich.<sup>5</sup> After World War II and the political changes that saw Hungary

1 This approach originated from both European romanticism and colonialism, and regarded as ‘Orient’ everything that lay beyond the borders of Christian Europe (Saïd 2000).

2 In Russian literature there is a clear distinction between ‘Центральная’ and ‘Средняя Азия’, the latter meaning the area south of the Sir-Darya river, which is mainly characterised by settled oasis civilisations.

3 Pósta 1905.

4 László 1955.

5 Fettich 1926a, 1–14; Fettich 1937; Fettich 1951.

became part of the Eastern Bloc which also led to a greater emphasis on Slavic archaeology, there were much enhanced opportunities for research in the Soviet Union, particularly in Central and Inner Asia: some students studied archaeology in Moscow and Leningrad (today Saint Petersburg), such as István Erdélyi, whose thesis addressed the eastern contacts of Avar material culture and was supervised by a leading Soviet scholar, Professor Mikhail Illarionovich Artamonov.<sup>6</sup> A similar study was also carried out by Csanád Bálint, applying a different methodology and approach, and which resulted in a German monograph on the archaeology of the Eastern European Steppes.<sup>7</sup>

The eastern origin of some weapon types has often been discussed, like in the case of reed-shaped spearheads,<sup>8</sup> sabres,<sup>9</sup> lamellar armour and ring-pommel swords.<sup>10</sup> Recently, however, Csanád Bálint has drawn attention to the dangers of the so-called 'Orient-preferent' approach, according to which such eastern artefacts are considered to be the earliest and these are supposed to be the origins of artefacts found in the Carpathian Basin.<sup>11</sup> In respect of such artefacts, it is therefore important to also cite other eastern analogies and their original chronological and cultural context, and to take account of other possibilities than just migration for their transmission, such as trade, exchange, gifts, and diffusion.

The archaeological heritage of the Steppes and its specific depositional rules favoured the preservation of weapons, and consequently there are numerous weapon finds from this area which offer good analogies for research in the Carpathian Basin. The difficulties of such research, however, include the huge geographical distances, the uneven state of research, the chronological gaps, as well as unelaborated chronology, and more recently the difficulties in acquiring relevant literature. These eastern contacts for polearms and edged weapons will be presented in the chapter below.

### 1.1 *Polearms*

Inner Asian analogies have played a significant role in research on the origins of reed-shaped spearheads with connecting chap (P.I.A), since this type was traditionally held to be the earliest weapon type of the Avars that arrived

6 Erdélyi 1982.

7 Bálint 1989.

8 Ilona Kovrig supposed the Inner Asian origin of this type (P.I.I.a–b) because of their good 'quality' (Kovrig 1955a; Kovrig 1955b).

9 Garam 1979, 63–64; Garam 1991a.

10 Bóna 1980, 42–52; Mesterházy 1987, 219–245.

11 Bálint 2004a, 246–252; Bálint 2007, 545–562.



directly from the remote regions of Inner Asia. Theories of Inner Asian origin mostly connected to the so-called 'pyre' or 'sacrificial' theory<sup>12</sup> which will be presented below.

The theory of sacrificial fire or 'pyre' was constructed by Dezső Csallány, according to whom reed-shaped spearheads with connecting chap (P.I.A) were put to fire together with a pair of stirrups and horse bit as a burial sacrifice, and were buried separately from the grave in a shallow pit. He interpreted this rite as an Eastern European phenomenon practised by the Kutrigurs (Bulgaro-Turks).<sup>13</sup> This interpretation was refuted by Ilona Kovrig who regarded these spearheads as one of the earliest artefacts of the Avars from the 6th century brought from Inner Asia together with the circular stirrups with rectangular loops and trefoil-shaped harness ornaments with tufted ends. This was based on the good preservation of these artefacts which were attributed to Inner Asian products based on literary sources.<sup>14</sup> These arguments were also accepted by István Bóna who combined both theories and stated that the spears and stirrups were of Inner Asian origin and were of good preservation because they were only secondarily burnt on a pyre.<sup>15</sup>

The 'sacrifice' theory was based on the find of Bácsújfalu (today Selenča in Serbia) where construction workers found a great number of artefacts (among others a spearhead of type P.I.A) supposedly in a bronze cauldron. The main problem with this description of the archaeological context is that the artefacts found on the site would simply not fit into the cauldron, as well as the fact that several bones were found around it,<sup>16</sup> suggesting that a number of possible burials were in fact disturbed by the construction work. The argument of secondary burning or melting traces were also used as an evidence for this theory by both Csallány<sup>17</sup> and Bóna.<sup>18</sup> However, metallographic examination

12 Kovrig 1955a, 30–44; Kiss 1962; Bóna 1971a, 240 (24); Bóna 1980, 47–48; Mesterházy 1987, 219–245.

13 The starting point of the pyre-theory of Csallány was the Bácsújfalu find, where he supposedly observed signs of melting (Csallány 1953, 133–137). The archaeological context of the find is not clear, because it was found by construction workers, whose observations were refuted by Péter Tomka (2008, 230), although he still considers it an offering.

14 Ilona Kovrig (1955a, 30–37, 40–41) listed eight reed-shaped spears with connecting chap and grid-patterned rings.

15 Bóna 1971a, 240 (24); Bóna 1980, 47–48. Metallographical examination of this type excludes the possibility of secondary burning (Piaskowski 1974, 122–124).

16 Tomka 2008, 230.

17 Csallány 1953, 133–137.

18 Bóna 1971a, 240 (24); Bóna 1980, 47–48.

of an example of this spearhead type from Környe,<sup>19</sup> as well as examples from graves No. 710 and 715 from Budakalász, contradict the theory of secondary burning which would likely have resulted in deformation or nitridation (high nitrite content).<sup>20</sup>

The direct attribution of such spearheads to burial sacrifice or to pyres is also problematic because of their context. Ten examples of spearheads of type P.I.A were found in burial contexts (six from males and four from horse burials), and only 11 such spearheads are stray finds, mostly found together with elements of horse harness (stirrups and horse bits), but without observation of burnt surfaces, pyres, calcinated bones or ashes. The ten spearheads known from burial assemblages are all of good preservation and show no traces of secondary burning.

The assumption of Inner Asian origin for these spears is based on their good preservation and the theory of sacrifice. According to Chinese literary sources the ancient Turks were excellent blacksmiths leading to the notion that all iron artefacts of good preservation must be of Inner Asian origin. A good indicator of Asian origin for ferrous artefacts could be their cast iron manufacture,<sup>21</sup> though metallographic evidence contradicts the early existence of cast iron among the Avars.<sup>22</sup>

Two kinds of sacrifices are known from the Turkic Empire, the so-called '*оградку*', fences made of stones with carved stone statues in them, and '*майник*', the cache usually dug into burial mounds (kurgans).<sup>23</sup> The 'Avar type' sacrifice is usually identified as '*майник*', although no burial mounds were used in Avar burial rites, as well as the composition of such sacrifices being completely different.

Moreover no reed-shaped spearhead with connecting chap and grip-patterned ring is known from Inner Asia. However, the possibility for comparative examination is limited due to the scarcity of contemporary Inner Asian finds. The only known spearheads from Inner Asia were found in the 7th and 8th kurgans of the Katanda Ist cemetery and described and dated to the 5th–6th centuries by Gavrilova. These were cited by the study by István Bóna on the Szegvár–Sáboldal burial.<sup>24</sup> These spearheads from Katanda are reed-shaped,

19 Piaskowski 1974, 122–124.

20 Pleiner 2006, 70.

21 For early Chinese iron casting see: Needham 1958; Barnard 1961; Needham 1964, 398–404; Rostoker – Bronson – Dvorak – Shen 1983, 196–210; Wagner 1992, 335–361.

22 Piaskowski 1974, 122.

23 Tomka 1986, 35–57; Stark 2008, 121–126.

24 Gavrilova 1965, 55.

their blade is shorter than the socket and no connecting chap can be observed, and they are different from the so-called 'Szentendre type' (P.I.A). Inner Asian spearheads are mainly important for understanding the spread of heavy cavalry in the region.

Reed-shaped spearheads had already appeared during the Xiongnu period in Inner Asia but their number and significance was not considerable. This type was mainly characteristic of the Kokel' culture of Tuva from the 1st to the 3rd centuries AD. Their main attribute was the long socket and the short reed-shaped blade of lenticular or rhombic cross section.<sup>25</sup> Representations of mounted and armoured warriors with lances are known from the petroglyphs of the Tashtyk culture (3rd–5th centuries AD).<sup>26</sup>

Spearheads were extremely rare during the Turkic period, their socket being long and open, while their blade is short, deltoid or reed-shaped, and the socket was usually reinforced by a ring. Although the spearheads from Katanda were cited as weapons of the 5th–6th centuries, Hudjakov dated them to the 7th century.<sup>27</sup> Representations of spears with flags are known from the Turkic period, the mounted warriors usually holding the spear with one hand, while they use their other hand to hold the reins.<sup>28</sup> The Inner Asian reed-shaped spearheads only provide an analogy for a specific type of Avar spearhead, and no exact correspondence can be observed.

The reed-shaped spearheads with long blade of the Middle phase (P.I.B/1, like the example from Ivánca)<sup>29</sup> has a good analogy in the find from Glodosy which is dated to the second half of the 7th century.<sup>30</sup> This contact is not surprising, since analogies for the crossguards of the Middle phase also come from the same region.

The Late phase was characterised by narrower blades of spearheads. A similar process was also observed in Eastern Europe, in the northern part of the Caucasus and in the Saltovo culture.<sup>31</sup> Conical spearheads are well known weapons in the burials of the Saltovo culture.<sup>32</sup> The pierced blade of spearheads known from grave No. 48 at Košice–Šebastovce is a widely spread feature

25 Khudiakov 1986, 81–83.

26 Khudiakov 1986, 106–107.

27 Khudiakov 1986, 156–157.

28 Khudiakov 1986, 163.

29 Bóna 1970, 244, 8. kép 20.

30 Smilenko 1965, 36.

31 For the Northern Caucasus, see: Kochkarov 2008, 60; for the forest-steppe variant of the Saltovo culture at Severskii-Donets river, see: Aksenov – Mikheev 2006, 111. Ris. 19. Ris. 63.

32 It was already observed by Éva Garam (1995, 350).

in the forest-steppe variant of the Saltovo culture, though the blade of these spearheads is lenticular and equipped with a central rib.<sup>33</sup>

### 1.2 *P-shaped Suspension Loops*

P-shaped suspension loops appeared more or less contemporaneously throughout Eurasia, distribution of these suspension loops will be presented from East to West in the following lines. Swords with two-point suspension were already known from the second half of the 6th century in the Far East. The chronology of swords in China is facilitated by the fact that these weapons were exclusively found in high-status burials (generals and emperors), which can be dated by inscriptions to a specific year. Swords with P-shaped suspension loops are known from the grave of General Li Xian (569) at Ningxia and from the grave of the Emperor Wudi (died in 578) at Xianyang.<sup>34</sup> Ring-pommel swords with P-shaped suspension loops were widely spread throughout China during the Sui- and Tang-dynasties (map 51).<sup>35</sup>

This mode of suspension spread in the Far East probably as a result of Chinese influence. This type of suspension loop is known from Japan from the first half of the 8th century as represented by the sabre of the Shosoin treasure at the Todeiji temple which is decorated with gold and silver sheets.<sup>36</sup> According to the attributes of this edged weapon (curved blade and false edge) it can be regarded as the first Far Eastern sabre.

No suspension loops are known from Inner Asia except for some uncertain examples from grave No. 9 at the Kudyrga cemetery.<sup>37</sup> However, several representations are known from the Sogdian wall paintings of Central Asia. It is important to note that the wall paintings on the southern wall of the 1st building at Afrasiab (Old Samarkand) from the 7th century, depict not only edged

33 Similar spearheads (with different blade shape) are known at the Sukhaia Gomolsha cemetery from cremation burials: Mikheev 1985, 118. ris. 9.119, ris. 10/12, 120. ris. 11; Aksenov – Mikheev 2006, 111. ris. 40/1, ris. 63/8. ris. 72/2.

34 Koch 1998a, 574.

35 Alexander Koch (1998a, 572–584, Abb. 1) listed them from Shaanxi, Henan, Gansu and Shanxi provinces. (Finsterbusch 1976).

36 The treasure of Shosoin contains the wealth of Emperor Shomu (701–756) and his family, dating the sabre to the first half of the 8th century. According to the inventory of this treasure the sabre is of Chinese style or origin (Shirakihara 1978, 35–36).

37 Anatolij Ambroz (1986b) described the sword from grave No. 9 at the Kudyrga cemetery with P-shaped suspension loops, however, its function is not unequivocal according to Gavrillova's publication (1965, 24, tabl. xvii/10–11). Next to the dagger (not sword!) a hooked iron band was found, probably aiding its suspension. No analogy is known for that artefact.

weapons with two-point suspension but also swords vertically suspended by scabbard slides<sup>38</sup> which are often represented together with P-shaped suspension loops without any function.<sup>39</sup>

Some scholars tend to date the origins of two-point suspension to the end of the 4th–beginning of the 5th century in Iran,<sup>40</sup> despite the fact that there is no evidence available for its appearance before the 7th century. All of the representations of Khusraw I (531–578) and Khormizd IV (579–590) depict these rulers with one-point suspended swords,<sup>41</sup> while Khusraw II (590–627) already wore a sword with two-point suspension on his belt.<sup>42</sup> Alongside the use of two-point suspension swords, a belt of new type appeared on the rock reliefs of Taq-i Bustan, showing that the ornamented belt with several side straps is probably connected to the appearance of these swords with two-point suspension.<sup>43</sup> Those Sassanian swords known from archaeological contexts are not identical with the swords from the representations on rock reliefs and silver plates. All of them are covered with gold or silver plates of scale ornament<sup>44</sup> with two P-shaped suspension loops and a hilt with finger divider.<sup>45</sup> All of these swords were found in Daylamán in the northern periphery of the Sassanian Empire and dated to the 7th century.<sup>46</sup>

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38 See fig. 96. Al'baum 1975, 45. Ris. 11.

39 This feature is also significant for the ethnic interpretation of the representation, since the bearded man's costume consists of a frontlet, earring and torques as identified by Livshits (1965, 6) based on an inscription with the Hephtalites living in Afghanistan (Kushano-Hephtalite Kingdom).

40 According to William Trousdale (1975, 94) the Sasanians borrowed this suspension from the Hephtalites. See: Frye 1984, 345; Overlaet 1993, 93.

41 Orbeli – Trever 1935; Masia 2000; Harper 1983.

42 Fukai – Horiuchi 1969, pl. xc. The sword of Khusraw II has some archaic attributes like its chape differing from the 7th century swords of Iran. The relief of Taq-i Bustan is dated by Ernst Herzfeld (1941, 329–341) to the reign of Khusraw II between 610 and 626. Representation of a similar sword is known from the silver plate of Pur-i Vahman (Overlaet 1993, 93; Masia 2000, 206–207).

43 William Trousdale (1975, 96) described a new belt type linked to the change in sword suspension (Overlaet 2006, 85).

44 The scale ornament probably imitated feathers interpreted by Bruno Overlaet (1982, 201–202; Overlaet 1993, 93) as a Zoroastrian belief of a great bird (Varagna) the feathers of which makes the warrior invincible.

45 Bálint 1978, 173–177; Overlaet 1993, 93; Masia 2000, 217–219.

46 Brentjes held these swords to be Sogdian based on their formal attributes (Brentjes 1993, 34), however, their distribution in northwestern Iran contradicts this theory (Bálint 1978, 177; Overlaet 1993, 93; Overlaet 2006, 191–192; Masia 2000, 217).

P-shaped suspension loops and two-point suspension are also well known in Eastern Europe, from the Caucasus Mountains to the border of the forest steppe, and from the Volga river to the Carpathians. Their distribution has been analysed in detail by A.K. Ambroz.<sup>47</sup> P-shaped suspension loops are known from the Carpathian Basin in great number (45 pieces),<sup>48</sup> exceeding the number of Eastern European finds (19 examples, map 51).<sup>49</sup> The earliest of these loops are dated to the second half of the 6th century.<sup>50</sup>

This mode of suspension was characteristic not only for the steppes and the great civilisations of Asia but for the Byzantine Empire too. Three cases of P-shaped suspension loops are known from Italy, from the knives of Castel

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47 Ambroz 1986b; Bálint 1993.

48 See chapter III.2.d type S.4.

49 P-shaped suspension loops from Eastern Europe:

1. Artsybashevo (Ambroz 1986b, No. 17; Bálint 1993, 29).
2. Armievo (Ambroz 1986b, No. 14; Bálint 1993, 30).
3. Borisovo (Ambroz 1986b, No. 9; Bálint 1993, 31).
4. Borovoe (Ambroz 1986b, No. 18; Bálint 1993, 32).
5. Chmi (Ambroz 1986b, No. 16; Bálint 1993, 33).
6. Diurso (Bálint 1993, 35).
7. Glodosy (Ambroz 1986b, 24; Bálint 1993, 36).
8. Ilovatka (Ambroz 1986b, No. 10; Bálint 1993, 37).
9. Liventsovka VII. kurgan No. 35 (Bezuglov – Iljukov 2007, 47).
10. Malaja Pereshchepina (Ambroz 1986b, No. 32; Bálint 1993, 41).
11. Maniak (Ambroz 1986b, No. 30; Bálint 1993, 42.).
12. Martinovka (Ambroz 1986b, No. 6; Bálint 1993, 43).
13. Rovnoe (Ambroz 1986b, No. 19; Bálint 1993, 45).
14. Sivashovka (Orlov 1985, 98–105; Bálint 1993, 46).
15. Taman (Ambroz 1986b, No. 22, 23; Bálint 1993, 48).
16. Üch tepe (Ambroz 1986b, No. 7; Bálint 1993, 49).
17. Verkhnaia Eshera, Pysta, (Ambroz 1986b, No. 15; Bálint 1993, 50).
18. Vinogradnoe (Komar 2006, 361.9).
19. Voznesenka (Bálint 1993, 51).

50 István Bóna (1980, 49, 51) dated the pieces from Szegvár, grave No. 75 and 99 from Környe, Törökbálint, Zsámbok and Čoka the earliest and dated them to the 6th century. At least the dating of the burials from Zsámbok (Garam 1983, 140, Abb. 1/1,2. Abb. 6/1–2) and grave No. 45 of Čoka (Kovrig – Korek 1960, 262, fig. 6) is highly problematic, the rhombic hilt decoration of Zsámbok and its close connections with the Bócsa horizon date it to the second third of the 7th century, while the semicircular suspension loops of the Čoka swords is characteristic for the end of the Early phase, which is also confirmed by Éva Garam 1991a, 147.

Trosino and Nocera Umbra,<sup>51</sup> and from a sword from southern Italy covered with silver foils.<sup>52</sup> Two representations are also known: one from the wooden door of the church of Santa Sabina<sup>53</sup> and another from the so-called ‘David-plate’ found in Cyprus.<sup>54</sup>

P-shaped suspension loops from Avar-age swords are part of a Eurasianwide process of the spread of a military innovation regarding two point suspension (map 51). This new way of suspension probably played a significant role in the spread of single-edged swords. The parallel appearance of Chinese and East-Central European examples shows how quickly this innovation spread and questions the justification of research on its origins. We believe that the origin of these P-shaped suspension loops cannot be solved with our current data.

Among the edged weapons, the single-edged swords covered with gold or silver foils fitted with P-shaped suspension loops (E.II.A/1.b) and sabres with star-shaped crossguards (E.III.A–C/2) have strong Eastern European links (map 51). No close contacts with Inner Asian edged weapons can be detected. However, some details of suspension, like P-shaped loops (S.4), known from Sassanian Iran and Sogdian frescoes of ancient Samarkand (Afrasiab) and Penjikent, and ring-pommel swords (E.I.C/2 and E.II.B/2), popular weapons in the Far East (China, Korea, Japan), are suitable for comparative analyses.<sup>55</sup>

Single-edged swords covered with gold or silver foils with P-shaped suspension loops (E.II.A/1.b) are well known from the burials of the Eastern European Sivashovka horizon,<sup>56</sup> dated in Russian and Ukrainian research to the second and third quarter of the 7th century,<sup>57</sup> though Avar burials from the Carpathian Basin suggest a slightly earlier date, in the first half of the 7th century.

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51 Their manufacture and decoration is different from that of the examples from the Carpathian Basin and Eastern Europe, both examples being decorated by openwork technique, the P-shaped suspension loops were not used in pairs but the second loop was a small semicircular one. Paroli – Ricci 2005, Tav. 3–4. 228–229.

52 Theisen 2008, 390.

53 D’Amato – Sumner 2005, 12.

54 Wander 1973, 92, fig. 5.

55 See chapter IX.1.

56 For the definition of this horizon: Orlov 1985, 105. Only 9 burials belong to this ‘culture’: Sivashovka 3rd kurgan 2nd burial; Vinogradnoe 5th kurgan 3rd burial, Arcibashevo Izobil’noe 1st kurgan 4th burial, Portovoe 12th kurgan 5th burial, Epifanov, hutora Krupskaja 4th kurgan 5th burial, Chapaevskoe 29th kurgan 2nd burial, Üch tepe, Verhne Pogromnoe 1st kurgan 12th burial (Komar – Kubyshev – Orlov 2006, 280–281). All of the swords belonging to these burials have the same attributes as type E.II.A/1.b.

57 Oleksij Komar (2006, 238) dated it, on the basis of historical arguments, to between 665 and 685. Orlov dated the horizon to the second half of the 7th century



### 1.3 *Ring-pommel Swords*

Ring-pommel swords are known not only from the Avar-age Carpathian Basin but were also already in use in the Early Roman Imperial period (1st–2nd c. AD) among Germanic and Sarmatian tribes up until the Marcomannic wars (166–180 AD). These ring-pommel swords were the characteristic edged weapons of the Sarmatian period on the Eastern European steppes.<sup>58</sup>

The theory of a Far Eastern origin for ring-pommel swords first appeared in a study by Csanád Bálint on Sassanian swords,<sup>59</sup> and was later elaborated on by István Bóna who supposed that ring-pommel swords were used as a result of an ancient Asian tradition already established by the time of the first generation of Avars in the Carpathian Basin.<sup>60</sup> This interpretation became the theoretical basis of the twofold origin (Central and Inner Asian) of the Avar heritage.<sup>61</sup> This theory was followed by László Simon who refuted Csallány's chronology based on this supposed Asian origin of ring-pommel swords. Simon drew attention to the significance of the sword of Mandelos, the ring-pommel of which was cast of copper alloy, a common feature with Far Eastern swords.<sup>62</sup> However, the difficulty of using Far Eastern swords as an analogy for similar swords from the Carpathian Basin was argued by Csanád Bálint who drew attention to the absence of ring-pommel swords in Central and Inner Asia,<sup>63</sup> however it can be the result of the different burial rite in the former area.

Ring-pommel swords were used in Inner Asia and South Siberia from the first half of the first millenium. Single-edged ring-pommel swords were a characteristic weapon of the Kokel' culture,<sup>64</sup> the Tashtyk culture of the Minusinsk Basin<sup>65</sup> and Berel' culture of the Gorno-Altay (single-edged ring-pommel sword with crossguard), all of which date to the 2nd–5th century.<sup>66</sup> These cultures are contemporaneous with the Eastern European Sarmatian period, and therefore are unsuitable analogies for the Avar swords of the 7th century.

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(Komar – Kubyshev – Orlov 2006, 371–373), while Rasha Rashev (2007, 195) correctly dated it from late 6th and to early 7th century.

58 Khazanov 1971, 5–14.

59 Bálint 1978, 206.

60 Bóna 1980, 51.

61 Bóna 1984a, 310–311.

62 Simon 1991, 273.

63 Bálint supposed a Byzantine origin for these swords (Bálint 1993, 219; Bálint 1995, 269–271).

64 Khara-Dag-Bazhi 1st grave, Shurmak-tej 1st kurgan, Kokel' kurgans No. 11, 12 and 32 (Khudiakov 1986, 79–80. ris. 31/1).

65 Khudiakov 1986, 101–102, Ris. 40/3.

66 Sorokin 1969, t. X. s. 234; Khudiakov 1986, 131, Ris. 59/1.



Ring-pommel swords became common from the 4th century AD and remained in use until the 8th century in the Far East. Ring-pommel swords also have a long tradition in China, spanning several hundred years, where they were already known from the Zhan Guo period (481–222 BC) and became widespread during the Han-dynasty (206 BC–220 AD).<sup>67</sup> These swords were extremely popular in China at a time contemporary with the Early Avar period where such swords were suspended using P-shaped loops. A miniature model of a ring-pommel sword with P-shaped suspension loops is known from the grave of Emperor Wudi (died in 578) and from the burial of General Li Xian (569).<sup>68</sup> P-shaped suspension loops are also on ring-pommel swords from Luoyang (Metropolitan Museum),<sup>69</sup> from grave No. 46 at the Xian cemetery of the Wei-family. Representations of these swords are known from the walls of the burial of Shi Shewu of Sogdian origin in Guyuan and on the guard statues of the Sui-dynasty.<sup>70</sup> Ring-pommel swords are probably represented on many more guard statues, with the characteristic feature itself invisible since such guards were usually depicted with hands on the pommel which was covered by the long, loose sleeves of their costume.<sup>71</sup>

Ring-pommel swords spread throughout Korea and Japan most likely as a result of Chinese influence. Such swords are known from the period of the Three Kingdoms (Silla, Paekche and Koguryo, in the 4th–7th c. AD), primarily from the royal burials of Kyongju.<sup>72</sup> The use of ring-pommel swords is contemporaneous with the Kofun period in Japan.<sup>73</sup> However, the swords in Korea and Japan are characterised by a ring-pommel cast of copper alloy and riveted to the hilt of the iron sword. The pommel was usually decorated with phoenix, dragon or trefoil motif.<sup>74</sup>

Representations of ring-pommel swords are also known from Sogdian wall paintings in Transoxiana. Embassadors in two different costumes are represented with ring-pommel swords on the wall paintings of Afrasiab (Old Samarkand) from the 7th century, on a scene depicting Varkhuman ikhshid

67 Yang 1992, 210, Abb. 301–304; Koch 1998a, 587; Koch 2006.

68 Koch 1998a, 576, Abb. 2. Taf. 73/2.

69 Nickel 1973, 134, 10. fig; Koch 1998a, Taf. 74/1.

70 Koch 1998a, 589, Abb. 5. Taf. 82.

71 Guard statues of general Zhang Sheng in Anyang (Henan province) (Koch 1998a, 580, Abb. 3).

72 Ito 1971, 62–68, Abb. 46–47; Nelson 1993, 257.

73 Kakudo 1991, 56, Kat. No. 26.

74 Kaya 1992, 44–47, Pl. CXLIX.

(the ruler's title) accepting ambassadors from various countries.<sup>75</sup> A number of those depicted with ring-pommel swords wear a head-dress typical of China during the T'ang-dynasty,<sup>76</sup> while a further group (on the Western wall of the room) wear hair knots and feathers on it.<sup>77</sup> The representation of ring-pommel swords in Transoxiana therefore need not mean its local use, as all of these depictions represent people from the Far East.

Al'baum identified this first group as ambassadors from Eastern Turkestan (Xinjiang), noting that their costume (yellow silk caftan, short hair and black cap) was common in China during the T'ang period,<sup>78</sup> and it is therefore probable that the people on the wall of Afrasiab are simply Chinese mentioned in the text attached. The costume of the second group is a short, yellow caftan of long sleeves, loose trousers, small black cap, hair knot and feathers. Lazar Al'baum has cited Chinese chronicles for the head-dress with two feathers in Korea (Gaoli),<sup>79</sup> and therefore these people can be identified as Korean ambassadors, verified by the great number of ring-pommel swords found in Korea.<sup>80</sup>

Ring-pommel swords are extremely rare finds in Eastern Europe: only two such weapons are known from this huge region. The ring-pommel sword from the hoard of Malaja Pereshchepina near Poltava in the forest-steppe region shows very similar characteristics to the examples from the Avar Age Carpathian Basin, both in its shape and decoration.<sup>81</sup> The second example was found in the cemetery of Shoshkin in the Mordvin region in the forest belt. This single-edged sword bears a ring-pommel made from the iron of the hilt, and its suspension loop is identical to the example from Mandelos.<sup>82</sup>

The ring-pommel sword from Malaja Pereshchepina is of great importance not only because of the false edge of the straight single-edged blade and the triangular and rhombic granulation of the gold covering but also because the order of the fixing of the gold fittings was facilitated by the use of Greek letters on

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75 Two different perspectives are known for the chronology of the 1st room of Afrasiab: Al'baum (1975, 60–73) dated the painting to the 690s after the death of Varkhuman ikhšid, while Azarpay (1981, 47–48) dated it to the lifetime of the ruler, between 655 and 675.

76 Al'baum 1975, 23, ris. 11 and 14.

77 Al'baum 1975, ris. 7/24–25.

78 Al'baum 1975, 60.

79 Al'baum 1975, 74–75; Kaogu 1996, 1. 65; Koch 1998a, 587–588. The Korean identification was accepted by Markus Mode (1993, 200, Abb. 10, No. 24–25) who dated the painting to 648.

80 Ito 1971, 62–68.

81 Werner 1984a, 26–27; Komar 2006, 22, ris. 3. 38.

82 Shitov 2002, 173–174, Ris. 2.

the reverse which is clear evidence for its Byzantine origin.<sup>83</sup> This feature led Oleksij Komar to classify this sword amongst elements of Byzantine manufacture in the Barbarian style from the Pereshchepina hoard.<sup>84</sup> A characteristic feature of the Pereshchepina sword is that its surface is wholly covered with gold, unlike the Avar examples, where gold covering is only applied in strips, with the technical features of this Eastern European weapon being finer than those of the Avar examples.

The ring-pommel swords from the Avar settlement area belong chronologically to the Pereshchepina horizon (second third of the 7th century). Recent research, typified by Oleksij Komar, has linked this hoard to the Khazar expansion and emphasised its Central Asian contacts.<sup>85</sup>

In my opinion this type was an ostentatious weapon in the Carpathian Basin, and the Greek letters on the back of the gold foils of the Pereshchepina sword are of considerable importance in respect of its origins. These swords (together with belt-sets composed of pseudo-buckles) were probably produced by Byzantine craftsmen, though in a style entirely barbarian. Our current knowledge is not sufficient for deciding on the existence of Far Eastern contacts. However, it is important to note that even in the case of such Far Eastern connections, the Inner Asian origin cannot be proven, and eastern influences could have reached the Avars without migration. A possible solution would be their Byzantine manufacture, copying Far Eastern originals which reached Europe through the Silk Road.

## 1.4 *Sabres*

### 1.4.1 Questions in the Research of Sabres

The research on sabres is coeval with the study of Nomadic weapons. The origin of the sabre is one of the main questions of Eastern European research, which originally held them to be of Inner Asian origin.<sup>86</sup> The appearance of sabres in the Carpathian Basin was first interpreted as evidence for migration by a new ethnic group. József Hampel already regarded the appearance of the 'single-edged cavalry sword' as a result of migration of a Nomadic group from the East.<sup>87</sup>

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83 Werner 1984a, 26.

84 Komar 2006, 38.

85 Komar 2006, 230–240.

86 Hampel 1897, 45; Zakharov – Arendt 1935, 49–66.

87 József Hampel (1897, 45) described the sabres from Kiskassa, Tiszaeszlár, Kecskemét-Miklóstelep, Kecskemét-Nyíri erdő and grave No. 54 of Csúny. 'Schon früher hatten die

Sabres were first used as evidence for the migration of the Onogurs during the Middle phase (second half of the 7th century) by Gyula László based on his study of finds from Budapest–Tihanyi tér.<sup>88</sup> This theory was reinforced by the study of Samu Szádeczky-Kardoss,<sup>89</sup> and the idea of an Onogur–Bulgar migration became deeply rooted in Hungarian research. This theory was elaborated upon using a number of archaeological arguments by István Bóna who described the sabre of Iváncsa as a newly appeared weapon type, which he dated to the last third of the 7th century.<sup>90</sup> This migration theory and its chronology became an axiom of Avar archaeology.<sup>91</sup> Transoxiana has been regarded as the place of origin of these sabres by István Bóna who cited the weapons on the wall painting at Afrasiab as an analogy for the sabre from Ozora.<sup>92</sup>

The eastern origin of these sabres remained a focus for attention, with Éva Garam enlisting analogies of Middle Avar sabres and crossguards from Eastern Europe.<sup>93</sup> Csanád Bálint placed the emergence of the sabre to the north Caucasian and Central Asian periphery of Sassanian Iran and dated it to the second third of the 7th century based on a number of similar attributes to Sassanian swords (slightly curved blade and finger-hold).<sup>94</sup> István Erdélyi also studied these eastern influences on Avar material culture, suggesting that the sabre originated from Asia and that a number of the Late Avar sabres were of Eastern European (Saltovo) origin.<sup>95</sup>

The interpretation of sabres as an indicator of migration in the Middle Avar period was first questioned in light of the find from Tarnaméra which was dated to the Early phase.<sup>96</sup> László Simon observed the false edge (one of the attributes of sabres) on several Early Avar edged weapons,<sup>97</sup> and identified a group with sabre-like attributes: those with false edge or curved blade.<sup>98</sup>

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Awaren und vielleicht bereits die Hunnen den einschneidigen Säbeln mit sich gebracht' (Hampel 1905, 193).

88 László 1941, 112.

89 Szádeczky-Kardoss 1968, 84–87; Szádeczky-Kardoss 1971, 473–477.

90 Bóna 1970, 251.

91 Bóna 1971a, 245 (29).

92 Bóna 1982–83, 112.

93 Éva Garam (1979, 63–64) cited the finds from Glodosy, Galiat, Arcybashevo and Zachepilovka.

94 Bálint 1978, 184. The Sassanian origin of these swords is in question, since they were mostly found in Daylaman, a periphery of the empire and their suggested date (second third of the 7th century) is already the end of the Sassanian Empire (651).

95 Erdélyi 1982, 181.

96 Szabó 1965, 29–71; Simon 1991, 270, 307.

97 Simon 1983, 38–42; Simon 1991, 270; Simon 1993a, 171–192; Bálint 1995a, 65–67.

98 Simon 1991, 270; Simon 1993a, 171–192.

These observations led to a notable change in the nature of research on sabres: instead of focussing on migration theories and attributing the appearance of new types to the arrival of a new population, the main concern of the study of sabres became more descriptive. Csanád Bálint observed a false edge on the straight bladed edged weapon of Üch Tepe which he dated to the 6th century. He regarded the false edge as the main attribute of these sabres, and presumed the general appearance of 'proto-sabres' already during the Early phase.<sup>99</sup>

The edged weapons of the Middle and Late phase were studied by Éva Garam in detail with the publication of the burials at Tiszakécske–Óbög. The main attribute used was the crossguard, according to Garam the star-shaped (rhombic) crossguards were influenced by the cast bronze Byzantine crossguards. She identified a number of influences in the development of the sabre: Central Asian Nomads, Sogdia, Türk Qaganate, the Alans and Onogurs. She emphasised the use of sabres by light cavalry units, suggesting this weapon type was used by the Byzantines.<sup>100</sup>

The study of these sabres and their origin was of particular interest in Soviet-Russian archaeology. An early contribution to the study of Eastern European sabres was that of Zakharov and Arendt who suggested an Inner Asian origin for the sabre.<sup>101</sup> This was followed by Korzukhina in the 1950s on the evolution and chronology of sabres, which she divided into two chronological groups: 1. the 7th–9th century early examples and 2. the 10th–11th century, late examples.<sup>102</sup>

The study of Merpert was of particular significance in the research of sabres: he classified crossguards, and suggested an Eastern European origin for them, based on the light cavalry swords of the Sarmatians.<sup>103</sup> A problem with this theory is that the swords used for comparison are double-edged and the chronological gap between them and the sabres is significantly long, at more than 200 years.

Svetlana Pletneva was the first to utilise the curve of the blade as a primary attribute in the classification of Late Nomadic (12th–13th centuries) sabres.<sup>104</sup> Her method was followed by Kochkarov in his monograph on early medieval

99 Bálint 1992, 338–342; Bálint 1995a, 65–67.

100 Garam 1991a, 142–160.

101 Zakharov – Arendt 1935, 49–66.

102 Korzukhina already used the term 'sabre-sword' for a hybrid, transitional weapon showing attributes of both the sword and sabre (Korzukhina 1950, 63–89).

103 Two types of crossguard were distinguished on Khazar sabres: 1. straight crossguard with tapering ends; 2. straight crossguards with expanding ends. (Merpert 1955, 136).

104 Pletneva 1973, 17–19.

Caucasian close combat weapons.<sup>105</sup> In his dissertation on Saltovo culture horse burials and other studies, Aksenov used the crossguard classification of Korzukhina and Merpert.<sup>106</sup> However, Hungarian research was mainly influenced by the studies of Arendt<sup>107</sup> and Merpert<sup>108</sup> on crossguards, while the blades of these sabres were not considered.

Several scholars argued that on the 7th-century wall paintings of Afrasiab (Old Samarkand) Turkic warriors are depicted with slightly curved sabres,<sup>109</sup> but firstly Irina Arzhantseva measured the curvature of the blades on the wall paintings and she discovered that the blades of fig. 37 and 38 are curved in fact: this observation verifies the early (7th century) appearance of sabres in Central Asia.<sup>110</sup>

On the basis of this short overview of the history of the study of the sabre, it is obvious that most studies focused either on the crossguard or the false edge, with very little attention given to the blade itself. Moreover, discussion of chronology and the origin of the sabres are based mainly on historical hypotheses concerning migration.

The various attributes of these sabres will be examined in each region contemporary to those of the Carpathian Basin.

#### 1.4.1.1 *False Edge*

Single-edged swords with false edge appeared in Eastern Europe during the 7th century. One of the earliest examples was found in the burial of Üch Tepe on a sword with P-shaped suspension loops, and was dated by Csanád Bálint to the middle of the 6th century based on the coin of Justinian found as part of the burial assemblage,<sup>111</sup> though the same burial is usually dated to the 7th century in Russian research.<sup>112</sup> The false edge being observed on the single-edged sword

105 Kochkarov 2008, 24–25.

106 Aksenov – Mikheev 2006, 107.

107 Zakharov – Arendt 1935.

108 Garam mainly used the study of Merpert (1955) on the origin of sabres (Garam 1991a, 146).

109 M.G. Magomedov, A.K. Ambroz, L. Kovács and J. Werner shared this view. Cited by Kovács 1980, 7–9.

110 Arzhantseva 1987, 127.

111 The burial was dated by Iessen (1965, 179) to the 620s, and identified with a Khazar elite warrior participating in the siege of Tiflis (Tbilisi) in 628. Csanád Bálint (1978, 186; Bálint 1989, 36–37) dated it by associated coin to the 6th century (Bálint 1992, 332, 370; Bálint 1995, 118).

112 Alternate datings: the 7th century: Kiss 1997, 261–265; second half of the 7th century, parallel to Malaja Pereshchepina and Kelecej: Komar (2006, 118).

of the kurgan from Sivashovka, dated to the first half of the 7th century.<sup>113</sup> The ring-pommel sword from Malaia Pereshchepina also has a false edge, as observed by conservators at the Hermitage Museum, the find being dated to the middle of the 7th century.<sup>114</sup> As a consequence, it is clear that straight single-edged swords with false edge were generally known in Eastern Europe during the 7th century, though the main attribute of the sabre, the curved blade, did not appear at this time.

#### 1.4.1.2 *Curved Blade*

After the 7th-century curved sabres from the Carpathian Basin and Afrasiab,<sup>115</sup> similar edged weapons with curved blades first appeared during the first half of the 8th century in the Northern Caucasus and along the river Volga. The earliest example is known from a burial chamber at Galiat: the blade of this sabre is slightly curved, its false edge is long and well emphasised, its crossguard is long and straight, like the crossguard of the early Saltovo culture.<sup>116</sup> The eastern end of the Caucasus, around the region of Dagestan, also has important early Khazar sites for the understanding of the early evolution of sabres: a bone carving representing a mounted warrior with a sabre with curved blade was found in kurgan No. 17 at Chiriurt.<sup>117</sup> Sabres with curved blades were found at the site of Agachkala<sup>118</sup> and Tarkov, and fragments of curved blade were found in the cemetery at Verkhne-Chiriurt which dates to the end of the 7th and first half of the 8th century.<sup>119</sup>

Sabres with curved blades were found in early Volga Bulgarian cemeteries which date to the early 8th century. A sabre with curved blade and false edge equipped with a long, straight rod-like crossguard, was found in the 3rd burial of the 14th kurgan in the 2nd cemetery at Novinki, near the city of Samara.<sup>120</sup>

113 Orlov (1985, 101–105) dated it to the end of the 6th and first half of the 7th century. The false edge of the sword was cited by Bálint (1992, 340) as well.

114 Werner 1984, 26.

115 Arzhantseva 1987, 127–128.

116 This find is a transition towards the Saltovo culture, the cemetery dated by coins of Heraclius and 'Abd al-Malik (701) (Krupnov 1938, 113–121; Erdélyi 1982, 55–58. 31–42. képek; Bálint 1989, 26–27; Komar 2006, 88), while Gavritukhin (2005, 41) dated it to the first half of the 8th century.

117 Magomedov 1983, 77. ris. 23; Komar – Sukhobokov 2000. [http://archaeology.kiev.ua/journal/020300/komar\\_sukhobokov.htm](http://archaeology.kiev.ua/journal/020300/komar_sukhobokov.htm)

118 Smirnov 1951, 113.

119 Magomedov 1977, 41–42; Magomedov 1983, 75–77. 93.

120 Matveeva 1997, 63–64. 171. Ris. 73 (end of the 7th–first half of the 8th century (Matveeva 1997, 88).



Contemporary with this, sabres also appeared along the river Kuban in the Pontic region.<sup>121</sup> However, all known edged weapons of the Voznesenka horizon of Ukraine are straight, single-edged swords.<sup>122</sup>

The northwestern part of the Caucasus mountains is rich in evidence for these early sabres, and according to the studies of U. Iu. Kochkarov they appeared during the 8th century in this region. These blades are slightly curved and relatively short compared to the so-called 'Late Nomadic' sabres of the 12th–13th century. The earliest example was found in grave No. 248 at the Diurso cemetery, this sabre with slightly curved blade being equipped with a rhombic crossguard and P-shaped suspension loops, and is dated to the late 7th–early 8th century.<sup>123</sup>

The main attribute of the sabres, the curved blade, appeared in Eastern Europe relatively early but still around 20–30 years later than in the Carpathian Basin. A more robust and detailed chronological sequence for these developments has yet to be achieved, and therefore the current chronological scheme only reflects the present state of research.

#### 1.4.1.3 *Crossguard*

Star-shaped crossguards appeared at the same time in the Carpathian Basin and Eastern Europe, during the second half of the 7th century, having similar forms and technical features. Star-shaped crossguards covered with gold foils are known from the finds of Voznesenka, Iasinova and Glodosy. Three single-edged swords were found in the Voznesenka complex, two of which bear short rhombic crossguards with 'onion-shaped ends' covered with gold foil.<sup>124</sup> The Voznesenka find was identified with a sacrificial site and linked to the Eastern European appearance of the Khazars by Anatolij Ambroz<sup>125</sup> and Oleksij Komar.<sup>126</sup> They dated this complex to the middle or second half of the 7th century.<sup>127</sup>

121 Sorokina 2001, 63. 219. Ris. 23.

122 Smilenko 1965, T. VI. 2; Komar – Sukhobokov 2000. [http://archaeology.kiev.ua/journal/020300/komar\\_sukhobokov.htm](http://archaeology.kiev.ua/journal/020300/komar_sukhobokov.htm); Komar 2006, 89.

123 Kochkarov 2008, 34–35.

124 Komar – Sukhobokov 2000. [http://archaeology.kiev.ua/journal/020300/komar\\_sukhobokov.htm](http://archaeology.kiev.ua/journal/020300/komar_sukhobokov.htm); Komar 2006, 89.

125 Ambroz (1982, 212–220) first drew attention to its offering-character based on Inner Asian analogies, and linked it to the appearance of the Khazars.

126 Komar 2006, 10. 238; Gavritukhin 2005, 406–411; Gavritukhin 2008, 82–85.

127 Komar (2006, 85–87) dated it to the end of the 7th–beginning of the 8th century by the granulated decoration of the belt mounts.



The gold fittings and the crossguard covered with gold with precious stone inlay of the Glodosy find is of an extremely high quality. The crossguard is short and rhombic, its central part is a quadrangular field decorated by stone inlay and framed by pearl-wire. The interpretation of the Glodosy find is not unequivocal but it is usually identified as a cremation burial surrounded by ditches, which is a common characteristic with the Voznesenka complex, and it is dated to the same period. In Russian and Ukrainian research this find is linked to Khazar expansion.<sup>128</sup> It is important to emphasise that the sword of Glodosy is very similar to the sword of Malaja Pereshchepina, and has similar characteristics in the form of its decoration (like the drop-shaped stone inlay<sup>129</sup> and the pearl-wire decoration between the spherical frame of the P-shaped suspension loop) as the burials of the Bócsa—Kunbábony horizon.

Star-shaped (or rhombic) crossguards with onion-shaped ends covered by gold foil are known from Jasinova.<sup>130</sup> Similar crossguards were also found in the Borisovo cemetery in the Kuban region,<sup>131</sup> though similar artefacts are also known from the Caucasus region.<sup>132</sup>

#### 1.4.1.4 *Chronology*

The chronology of these artefacts is the subject of considerable debate. A.K. Ambroz dated them (Glodosy, Voznesenka, Iasinova) to the beginning of the 8th century in his much discussed study on Eastern European chronology,<sup>133</sup> though later changed his opinion and dated the Glodosy find to the end of the 7th century.<sup>134</sup> A.I. Ajbabin compared Glodosy with that of Malaja Pereshchepina and linked them to the Khazar expansion,<sup>135</sup> and later dated it to the last quarter of the 7th and beginning of the 8th century.<sup>136</sup> Igor

128 Smilenko 1965, T. VI. 2; Komar 2006, 18. The find was interpreted by its ditch as an offering complex, in spite of the burnt human bones found in it by Ambroz (1982, 217–219). The author interpreted the human remains as a human sacrifice, which must be regarded as entirely hypothetical. Ambroz (1981, 13, 18, ris. 6) dated the find to his VIth period (first half of the 8th century).

129 This decoration is known from a golden vessel of the Kunbábony burial (Heinrich-Tamáská 2006a, 209, Abb. 9).

130 Bálint 1989, 101, Abb. 46.

131 Bálint 1989, 44; Komar – Sukhobokov 2000. [http://archaeology.kiev.ua/journal/020300/komar\\_sukhobokov.htm](http://archaeology.kiev.ua/journal/020300/komar_sukhobokov.htm); KOMAR 2006, 89.

132 Sahanev 1914, T. III. 1–2.

133 Ambroz 1971, 116.

134 Ambroz 1981, 13, 18; Ambroz 1986b, 61.

135 Ajbabin 1985, 197–202.

136 Ajbabin 1990; Ajbabin 1999, 97. 171–185.

Gavritukhin dated the Voznesenka horizon to the last third of the 7th century, contemporary with the Ozora—Igar horizon in Hungary; and according to him the Galiat—Romanovskaja horizon is somewhat later, dated to the first half of the 8th century.<sup>137</sup> The chronology of Oleksij Komar is similar but he used different chronological boundaries based on historical arguments.<sup>138</sup>

#### 1.4.1.5 *Sabres in Inner and Central Asia*

Sabres appeared in Inner Asia relatively late, during the 9th–10th century, and therefore contradicting the theory of an Inner Asian origin for this weapon type.<sup>139</sup> The first edged weapon cited in Hungarian literature<sup>140</sup> as an analogy of Avar sabres was a single-edged sword from Srotstki, with ogee-shaped suspension loops (see the loops of the sabres from Ozora and Gyenesdiás). However, this weapon is dated to the so-called ‘Kimak’ period, i.e. the 9th–10th century.<sup>141</sup> The first real sabres with curved blade only appear in the Kimak culture in Western Siberia during the 10th century. However, these sabres differ considerably from the sabres of the Avar-age Carpathian Basin, since their hilt curved towards the edge of the straight or slightly curved blade which is characteristic of the early Hungarian sabres of the 10th century.<sup>142</sup> The first sabres with slightly curved blades in Transoxiana appear on the wall paintings of Afrasiab which date to second half of the 7th century.<sup>143</sup>

Representations of edged weapons with curved blades are found on Turkic stone statues known as ‘kamennye baby’.<sup>144</sup> The chronology of these statues is based on the chronology of the represented artefacts, and therefore these stone statues with representations of curved blades cannot be earlier than the 9th–10th century.<sup>145</sup> The first sabre known from Kazakhstan was found in Zevakino and is also dated to the 9th century.<sup>146</sup>

Sabres with curved blade first appeared in the Carpathian Basin during the second half of 7th century and parallely depictions of slightly curved blades

137 Gavritukhin 2005, 406–413.

138 Komar 2006, 124–125.

139 Only single-edged swords are mentioned in the most recent study on Inner Asian Turkic antiquities (Kubarev 2005, 100–101).

140 Fettich 1937, 61. Taf. XXXI.

141 Gavrilova 1965, 60. 105–106; Khudyakov 1986, 191.

142 Khudiakov 1986, 192–195.

143 Al’baum 1975, ris. 17, 18, tabl. XXXIV–XXXVI; Arzhantseva 1987, 127.

144 *Каменные бабы* or *каменные изваяния*.

145 Khudiakov (1986, 156) dated the appearance of single-edged swords (palash) on stone statues, see Kubarev 1984, 111–112.

146 Arslanova 1972, 56–76, ris. 2.

are known in Transoxiana (Afrasiab),<sup>147</sup> while this feature only spread in the region of the Caucasus, Kuban and Volga rivers a few decades later at the end of the 7th and beginning of the 8th century, while they reached Inner Asia and South Siberia only during the 9th century. The Middle Avar sabres of the Carpathian Basin can be regarded as early examples of this weapon type, and antecedents are not to be found in Eastern Europe, with all of the known sabres from the steppes being contemporary analogies.

Eastern influence reached Avar weaponry from the beginning of the Early phase and lasted until the end of the Late phase. These contacts were of various intensity, the closest analogies for Avar close combat weapons being found in Eastern Europe, but some elements of Avar swords are known from Korea and Japan.

## 2 Southern Mediterranean Region

Research on the Mediterranean and Byzantine contacts of Avar close-combat weapons presents several difficulties and limitations. On the one hand, written sources inform us on the Byzantine weapon trade with the Avar Qaganate,<sup>148</sup> whilst on the other hand, very few weapon finds are actually known from the territory of the Byzantine Empire itself, providing little basis upon which to make comparison. This problem is largely a consequence of different patterns of deposition, with weapon burials being extremely rare in Byzantium. The situation is more favorable in Italy where weapon burials were found in great numbers due to the burial customs of the Lombard population, while the local population was characterised by the lack of weapons in graves.<sup>149</sup>

The study of Byzantine weapons is limited to stray finds or representations, the weapon burials of Corinth<sup>150</sup> and Pergamon<sup>151</sup> should be mentioned as fortunate exceptions. Very few close-combat weapons have been identified as Byzantine in Avar-age burials. Swords equipped with crossguards cast of copper alloy have good analogies in the Byzantine Empire,<sup>152</sup> and similar contacts

147 Arzhantseva 1987, 127–128.

148 Pohl 2002, 195.

149 Riemer 2000, 18.

150 Altogether four weapon burials are known from the cemetery of South stoa in Corinth (Davidson – Weinberg 1974; Iverson 1996, 117–119; Vida – Völling 2000, 32–34).

151 A weapon burial with two spears was excavated in Pergamon (Felix Pirson), and several weapons are known from the iron artefacts from Pergamon (Gaitzsch 2005, 130–159).

152 Kiss 1987a, 193–210; Garam 2001, 158–159.

can be assumed for reed-shaped spearheads with connecting chap and grid-patterned rings, since similar finds are also known from Italy.<sup>153</sup> Unfortunately most of our knowledge of Byzantine weapons remains based on examination of written sources and pictorial representations rather than on archaeological finds which makes comparative analysis extremely difficult.<sup>154</sup>

Mediterranean contacts as represented by some artefact types, which could be acquired by the Avars by way of the Byzantine Empire or Italy, will be described, like reed-shaped spearheads with connecting chap (P.I.A),<sup>155</sup> open-work spearheads (P.III.E), double-edged swords with crossguard cast of copper alloy (E.I.B/2.b), some individual crossguard types (CG.4.a, CG.4.b, CG.7), and P-shaped suspension loops (S.4).

It is important to note that Avar—Byzantine relations were not one way but that Avar weaponry and fighting methods also deeply influenced the Byzantine army. These influences mainly affected the cavalry but they could be observed in several other fields of the military. The main source of these interactions is the ‘Strategy’ of Maurice which describes the state of Byzantine army at the end of the 6th century.<sup>156</sup> Most likely it was not only the Avar cavalry that influenced those of the Byzantines but there was also a similar converse process at work, since some accounts comment on Byzantine weapon trade towards the Avars.<sup>157</sup>

Archaeological traces of Byzantine arms and armour are known from several Late Antique forts of the Balkans built during the Constantinian period (4th century) and renovated by the Emperor Anastasius and/or Justinian. These forts were destroyed and abandoned by the end of the 6th or beginning of the 7th century, making the interpretation and dating of these stray finds particularly difficult.<sup>158</sup> Most of the spearheads found in Byzantine forts of the Balkans are lenticular, their blade being longer than the closed socket, and therefore are very similar to Merovingian weapons. Their interpretation is rendered more difficult by the existence of merceneries of Germanic origin serving in the Byzantine army who probably used their former equipment.<sup>159</sup>

153 See von Freeden 1991, 616–619; Schulze-Dörlamm 2006, 488. 494–497.

154 Byzantine weapons were described in the study of written sources by Koliás (1988, 30–35).

155 More detailed description on the chapter on Merovingian contacts.

156 Darkó 1937, 119–147; Szádeczky-Kardoss 1983, 317–326; Szádeczky-Kardoss 1986, 203–214.

157 Pohl 2002, 195. Kiss 1987a, 193–210.

158 Byzantine weapon finds are known from Caričin Grad (Kondić – Popović 1977, Tabl. xvii: 96; Bavant et al. 1990, 230, fig. 165, Pl. XL/246); Sadovec: Uenze 1992, I. 445. II. Taf. 42/1–4.

159 For Barbarian units fighting in the Byzantine army: Rance 2004, 290.

These spearheads cannot be regarded as special Byzantine artefacts, although they were generally used in this area.

Reed-shaped spearheads with connecting chap and grid-patterned rings can be connected to the Byzantine only by speculation, since it is a foreign type for both Merovingian Germanic kingdoms and the Avars.<sup>160</sup> The Mediterranean contacts of this type is emphasised by the numerous Italian examples (map 53).<sup>161</sup>

Openwork spears (P.III.E) are extremely rare in the Carpathian Basin, with only one example dated to the Early phase,<sup>162</sup> with all known examples (P.III.E/1.f) being probably from the Late Avar period. This latter group is only known from Transylvania, from the Mureş valley, and therefore it can be regarded as a local type. The early variant of this type is known mainly from Italy, from the Po valley, and they are frequent finds in Lombard burials but the type is also known from Albania.<sup>163</sup> All of the above mentioned occurrences suggest a Mediterranean origin for these spearheads.

### 2.1 *Crossguards Cast of Copper Alloy*

Double-edged swords with crossguard cast of copper alloy is a distinct type in the Avar Age but such swords are known from the 9th century (Carolingian period)<sup>164</sup> and from the 10th century.<sup>165</sup> Byzantine swords were identified in a weapon burial of the cemetery of the South Stoa in Corinth.<sup>166</sup> The study of these swords in Hungarian research was first undertaken by Attila Kiss who identified similar swords of Byzantine origin from the Carpathian Basin.<sup>167</sup>

According to Kiss the common characteristics of these swords are that all of them are double-edged, they are equipped with a crossguard cast of copper alloy, their pommel is also cast, and they are extremely rare in the Carpathian Basin.<sup>168</sup> He later altered this view, wherein he now regarded the crossguard

160 von Freeden 1991, 616–619.

161 The map is based on the lists of Uta von Freeden (1991, 627) and Mechtild Schulze-Dörlamm (2006, 494–497) with additions.

162 Kölked–Feketekapu B grave No. 82 (Kiss 2001, 28, II. 42, Taf. 28/9).

163 Szentpéteri 1984, 243.

164 Szőke 1992a, Taf. 20.

165 Sintu Gheoghe, Kunágota grave No. 1 (Kiss 1987a, 200–201).

166 Gladys Davidson-Weinberg (1974, fig. 4) published the burial as a 'wandering soldier's grave'; and held him to be a mercenary of Barbarian origin.

167 Kiss 1987a, 192–210.

168 Kiss 1987a, 194.

cast of copper alloy to be the main attribute for Byzantine origin, independently of the blade.<sup>169</sup> In this he was later followed by Éva Garam.<sup>170</sup>

The original sword first identified as Byzantine was found in the cemetery of the South Stoa at Corinth, from a cist burial with marble slabs oriented North-South, and as well as the sword a pottery vessel, knife, iron buckle, Olympia type copper alloy buckle and silver pendants were also included in the grave which is dated to the end of the 6th–beginning of the 7th century.<sup>171</sup> A good analogy for the crossguard is known from the Pergamon excavations as a stray find<sup>172</sup> but similar crossguards cast of copper alloy are known from the Cypriot site of Salamis.<sup>173</sup>

Two types of this crossguard are known from the Byzantine Empire, both of them cast of copper alloy with rhombic central part, with the end of the first type being rounded like that of the Corinth and Pergamon examples, while the second type is characterised by angular ends like the Cypriote example and second piece from Pergamon. The second type ends in a wedge-shape, and this is the antecedent of the star-shaped crossguards of the Middle Avar period.<sup>174</sup> The Corinth burial has been interpreted as that of a Slavic mercenary fighting in the Byzantine army by Davidson-Weinberg.<sup>175</sup>

Four weapon burials are known from this cemetery at Corinth, their orientation and architecture (cist graves) being similar to the Early Byzantine burials, but the deposition of weapons is exceptional. A number of studies have addressed this contradiction, with these burials being identified as Avars conquering the city,<sup>176</sup> whilst some held them to be Bulgarian<sup>177</sup> or perhaps Slavic warriors.<sup>178</sup> More recent interpretations have identified the deceased in these weapon burials as Slavic mercenaries in Byzantine service.<sup>179</sup> Not only the deposition of weapons are unusual in these graves, but the pottery vessel (cooking pot) deposited in the grave similarly contradicts the normal Byzantine burial custom, where exclusively jars or glass bottles were buried

169 Kiss 1996, 230.

170 Garam 1991a, 142–145; Garam 2001, 158–159.

171 Davidson-Weinberg 1974, 513–521.

172 Davidson-Weinberg 1974, 518. Taf. 112/f–g; the crossguard was found in the Eastern bath: Gaitzsch 2005, 156. Taf. 40.

173 Chavane 1975, Pl. 14/116.

174 Garam 1991a, 159.

175 Davidson-Weinberg 1974.

176 Davidson 1937, 229–238; Vida – Völling 2000, 32–34. Abb. 11.

177 Setton 1950, 502–543; Setton 1952, 351–362.

178 Davidson-Weinberg 1974.

179 Ivison 1996, 117–119.

with the deceased. This difference again suggests the foreign origin of the deceased buried with weapons.<sup>180</sup> Their ethnic affiliation, however, cannot be confirmed by the archaeological finds alone, though it is sure that the burial customs are generally similar to those of Byzantine, while the weapon burial rite itself is an alien characteristic.

The attributes described by Attila Kiss can be found on only two Early Avar swords, from grave No. 85 at Aradac–Mečka<sup>181</sup> and from grave No. 259 at Kölked–Feketekapu A cemetery,<sup>182</sup> the crossguard of which is an exact analogy for that of the sword from Corinth. Both crossguards were cast of copper alloy, their central part is rhombic, while their ends are fan-shaped and rounded, and the crossguard is boat-shaped in plan.

The sword from Aradac was dated to between 613 and 626 by Attila Kiss using historical arguments, since he supposed that the sword cannot be later than the siege of Constantinople in 626.<sup>183</sup> This burial is dated by the Fönlak type belt-set and its chronological relationship with the Akalan hoard which is dated by hexagrams minted between 613 and 631.<sup>184</sup> The burial of Kölked is dated by a Salona-Histria type purse-buckle and stamped copper alloy belt mounts to the first quarter of the 7th century.<sup>185</sup> On this basis, these Avar swords can be dated to the first quarter of the 7th century.

Only one double-edged sword with crossguard cast of copper alloy is known from the Late phase, from the 2nd grave in the cemetery at Čierný Brod–Homokdomb. The sword is straight, double-edged, its crossguard ending in a small tube, and its ends are composed of two discs. The end of the hilt is covered by a pommel cast of copper alloy with a small loop, probably used for fixing the wrist strap. Both the tube of the crossguard and the cross section of the pommel is octagonal.<sup>186</sup> Anton Točík dated this cemetery to the Late phase.<sup>187</sup>

An analogy for the Čierný Brod sword is known from a Carolingian cemetery in the Zala valley: a double-edged sword with similar coppered iron crossguard found in grave No. 55 at Garabonc Ist cemetery. According to Béla Miklós Szóke this pommel and crossguard were later, secondary additions to

180 Vida – Völling 2000, 34.

181 Nađ 1959, 62, Tab. XXVII/1.

182 Kiss 1996, 75–76. Taf. 57/20.

183 Kiss 1987a, 203–204.

184 Bóna 1982–83, 128.

185 Kiss 1996, 75–76.

186 Čilinská – Točík 1978, 46; Točík 1992, 9–12. Obr. 7.

187 Točík 1992, 9–12.

the blade.<sup>188</sup> The crossguard on the sword was forged of iron but covered with a layer of copper. The crossguard has a small hilt-tube, and the ends of these projections hilt are not composed of discs. An important difference is the cross section of the pommel and the hilt-tube, since it is circular and not octagonal, as in the Čierný Brod weapon.<sup>189</sup> The scabbard of the sword was made of beech wood covered with leather,<sup>190</sup> and was reinforced by a locket and a U-shaped chape made of iron plate.<sup>191</sup> Szőke interpreted the presence of such a sword of southeastern origin with the appearance of new ethnic groups arriving from the Balkans (Timočans and Abodrits = Praedenecenti) who had escaped from the Bulgars.<sup>192</sup>

Later, during the 10th century, D-shaped copper alloy crossguards were used, as in the case of the Kunágota sword.<sup>193</sup> A similar crossguard and pommel cast of copper alloy is known from the 10th century Fatimid in Egypt, decorated with an Arabic inscription (a Quran citation).<sup>194</sup> A double-edged sword with D-shaped crossguard cast of copper alloy was also found on the 11th century shipwreck of Serçe Limanı.<sup>195</sup>

The only common feature of the above-listed crossguards being the cast technique of copper alloy, with their forms being various. Five main types can be divided among them.

## 2.2 *P-shaped Suspension Loops*

P-shaped suspension loops are also known in the Mediterranean from this period: three such finds are known from Italy. P-shaped suspension loops appear on the ostentatious knives of Castel Trosino and Nocera Umbra,<sup>196</sup> while a sword with P-shaped suspension loops made of silver foils was found in southern Italy.<sup>197</sup> Only one Byzantine representation of a P-shaped suspension

188 Szőke 1992a, 93.

189 Szőke 1992a, 504; Taf. 20.

190 *Fagus Silvatica*: identification of Károly Babos. See: Szőke 1992a, 233.

191 Szőke 1992a, 233–234. Taf. 20.

192 Szőke 1992a, 95.

193 Kiss 1987a, 200–201.

194 Nicolle 1992, 318. 5. kép.

195 Nicolle 1992, 306; Schwarzer 2004, 366. fig. 21–4. A similar find is known from Saudi Arabia, from the site of al-Rabadha.

196 The manufacture and shape of these artefacts is different from the P-shaped suspension loops of the Carpathian Basin and the Eastern European steppes, since both of these artefacts are decorated by openwork technique (*opus interrasile*), the loops are not identical: the second one is smaller and semicircular (Paroli – Ricci 2005, Tav. 3–4. 228–229).

197 Theisen 2008, 390.



loop is known: the so-called David plate of the Cyprus treasure, the sword of Goliath being suspended at two points with P-shaped suspension loops.<sup>198</sup>

The Mediterranean influences found among the Avar weaponry were likely deeper and more numerous but the variable state of regional research and the different nature of their sources makes it difficult to describe these influences in more detail. Hopefully the growing number of archaeological finds and the changing orientations in research perspectives will eventually result in a more detailed and complex view of this subject.

### 3 Western Germanic Area

The identification of western, Merovingian contacts is much easier, since it is facilitated by the great number of finds, the better state of research, elaborated chronology, and the horizontal stratigraphic analyses of a series of cemeteries, all of which make it more suitable for comparative analysis.<sup>199</sup> Western influences reached Avar weaponry from the beginning of the Early phase and did not stop until the end of the Late phase but with the intensity of these relations changing constantly.

#### 3.1 *Early Phase*

##### 3.1.1 Polearms

Reed-shaped spearheads with connecting chap (P.I.A) are well-known from Merovingian cemeteries of South Germany and Italy (map 53). These weapons were originally regarded as Avar imports into Bavaria from the Carpathian Basin. Ursula Koch classified them into four regional types based on grooves on the blade and the faceting of the socket: 1. Untermassing type being characteristic of south Bavaria and Württemberg; 2. Szentendre type which was mainly known from Danubian sites from the Avar settlement area, 3. Nocera Umbra type was mainly characterised by its two grooves on the blade and faceted socket, and primarily distributed in Italy and south Germany, 4. Steinheim type which was exclusively distributed in south Germany, having spread first

198 See fig. 96. The plate was probably hidden around 629–630 as a silver hoard in Cyprus. The plate is now in the Metropolitan Museum. ([http://www.metmuseum.org/toah/ho/06/eusb/ho\\_17.190.396.htm](http://www.metmuseum.org/toah/ho/06/eusb/ho_17.190.396.htm)).

199 Hübener 1977, 510–527. For the chronology Koch 2001, 61–63.

from Baden-Württemberg. She suggested that these types appeared in the Merovingian kingdoms as a result of Avar influence during the 7th century.<sup>200</sup>

Uta von Freeden expressed a radically different opinion on these artefacts suggesting converse influences from the Byzantine Empire to south Germany and the Carpathian Basin. She compared spearheads from Italy and south Germany with Avar examples and drew attention to typological<sup>201</sup> and depositional<sup>202</sup> differences. According to her view the Avars simply did not have the technological level for manufacturing weapons of such good quality, thus the artefacts from Germany and Italy (map 53) cannot be regarded as mere copies of Avar originals, and the differences between the Avar and western pieces can only be interpreted as the product of different workshops.<sup>203</sup> Another German archaeologist, Mechtild Schulze-Dörlamm supposes an Italo-Byzantine origin of these spears.<sup>204</sup>

Although a Byzantine origin is supposed for these spearheads the strong relations between the Avar and Merovingian examples cannot be denied. Unfortunately this type is not known from any Byzantine sites from the Balkans

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200 The average length of Western European spears was between 20 and 30 cm, slightly bigger than the usual Avar examples. Ursula Koch listed eight examples of her Szentendre type. (Koch 1968, 255, 20. list A). Unfortunately this list is not correct since the spear from Esztergom–Nagyhegy is mentioned twice, and the spear from Szentendre (giving its name for the whole group) has ribbed rings on the socket instead of grid-patterned (the main attribute of the type according to Koch) (Koch 1968, 89–91).

201 The western parallels of the ‘Avar’ spears are characterised by a faceted socket framed by ribbed rings and double-grooved blade, sometimes with connecting chap (*‘Zwischenfutter’*) (von Freeden 1991, 614–619).

202 The main difference in depositional rules is that this type is never found in a horse grave in south Germany. (Koch 1968, 615; Schulze-Dörlamm 2006, 493–494) Uta von Freeden mentioned 68 such spears from South Germany and six from Italy which is triple the number of pieces from the Carpathian Basin. Their dating in the Merovingian cemetery of Schretzheim (Baden-Württemberg, Germany) is to its 4th phase (Stufe 4: 590/600–620/630), appearing at the turn of the 6–7th centuries in Altenerding and remained in use until the middle of the 7th century (von Freeden 1991, Liste 2. 626–627).

203 The Byzantines already used thrusting cavalry lances (*κονταριων*) before the spread of stirrups, having learned the use of such weapons from the Sassanians during their Persian wars. Maurice described the influence of Avar fighting methods to Byzantine cavalry in detail, although he did not mention the Avar origin of the lance and stirrup. The use of the lance is represented on a silver plate from Isola Rizza (Italy) where a mounted warrior wearing lamellar armour and ‘*Spangenhelm*’ is seen thrusting toward a German foot soldier (von Freeden 1991, 621–623). The plate is probably earlier than the appearance of the Avars.

204 Schulze-Dörlamm 2006, 488, 494–497.

or Anatolia, therefore a common Byzantine origin of these spearheads is not yet proven.

Lenticular spearheads with closed socket (P.III.A/1) is a type well-distributed both in Transdanubia and South Germany (Bavaria and Baden-Württemberg), though it is not necessarily of western origin, since it first appeared during the first half of the 6th century in the cemeteries of the Gepids and Lombards in the Carpathian Basin. These weapons are usual in the Merovingian cemeteries of Germany where according to their local chronology they were used between the middle of the 6th century until the first decades of the 7th century.<sup>205</sup>

Spearheads of 'Dorfmerking type' can be regarded as of western Merovingian origin amongst the weaponry of the Early Avar period. Similar artefacts are well known from early medieval cemeteries of South Germany and Italy where it is dated to the turn of the 6th and the 7th centuries.<sup>206</sup> Openwork spearheads with central rib similar to the polearm from Kölked–Feketekapu B grave No. 82 are known from Italy and South Germany during the 6th–7th century (map 54).<sup>207</sup>

### 3.1.2 Edged Weapons

Double-edged swords with fuller (spathae) are the most characteristic edged weapons with Merovingian contacts during the Early phase. The origin of the spathae dates back to the Late Roman period: they were originally used as cavalry swords and their spread is partly due to the parallel appearance of Hunnic double-edged cavalry swords.<sup>208</sup> The Late Roman tradition was of great significance for the development of Merovingian spathae, since workshops of Late Antique tradition survived the Migration period in Germany in the Rhine region.<sup>209</sup>

The term '*spatha*' was first used during the Roman period alongside the term '*gladius*' which designated the short double-edged infantry swords.<sup>210</sup> Later the *spatha* became dominant and was the usual name of a sword in the

205 Schretzheim I–III. phase: 545/550–590/600 (Koch 1977, 37, 109–110); South German 5th phase: 530–600 (Koch 2001, 62, 75).

206 Hübener 1972; Koch 2001, 63, 75.

207 See: von Hessen 1971, Abb. 1/1–4; the type is known from the cemetery of Trezzo sull'Adda, too: Roffia 1986, Taf. 6: 5. Their most recent study: Will 2007, 181–193.

208 Anke (1998, 73) divided the double-edged swords (spathae) into two groups, distinguishing western and eastern types.

209 Werner (1953, 40–43) and Böhner (1987, 412) described strong Late Roman continuity in weapon workshops of the Rhine-region.

210 The Republican and early Imperial Period distinguished the Celtic *spatha* from Roman *gladius*. Kolias 1988, 136.

Late Roman and Byzantine army.<sup>211</sup> Spathae were widely distributed during the Early Middle Ages, this weapon type being used throughout the whole of Europe during that period parallel to the Avar Age.

The research on spathae is especially well-developed in Merovingian archaeology. The first monograph written on the subject was the book of Ellis Behmer<sup>212</sup> whose work was continued by Wilfried Menghin.<sup>213</sup> As well as these Continental studies, a monograph on Anglo-Saxon Early Medieval spathae was also published.<sup>214</sup> Such studies have often focussed on pattern-welding techniques and their chronology which is of great importance.<sup>215</sup>

Pyramid-shaped spatha pommels cast of copper alloy are common in Europe during the Merovingian Era.<sup>216</sup> Identical pommels are also known from 6th century Gepid<sup>217</sup> and Pannonian Lombard burials.<sup>218</sup> Such pommels found in Merovingian cemeteries of southern Germany have been dated to the second half of the 6th century,<sup>219</sup> while similar pommels have been dated to around 600 and the first decades of the 7th century in the Altenerding cemetery.<sup>220</sup>

Most of these weapons are linked to the Germanic population living in the eastern part of Transdanubia and by the continuous Gepidic population of Transtisia and Transylvania. During the Early phase western influences were focussed on those regions that had close relations with the Merovingian world,<sup>221</sup> and in which case they cannot be regarded as imports as the culture of the group was basically Merovingian.

211 Lammert 1929, 1544–1545. The word 'spatha' is known in Greek (σπάθη) and was often used by Byzantine sources (Kolias 1988, 137).

212 Behmer 1939.

213 Menghin 1983.

214 Davidson 1962.

215 Ursula Koch (1977; Koch 2001, 84) revealed chronological consequences of patterns in pattern welding, with different periods of Schretzheim cemetery being characterised by these patterns. The period parallel to Early phase (second half of the 6th–first half of the 7th century AD) is characterised by fishbone pattern (Böhne – Dannheimer 1961, 107–122; Ypey 1982b, 381–388; Mäder 2000, 17–27; Mäder 2002, 277–285; Mäder 2004, 23–31).

216 Their list: Menghin 1983, 319–321. 3. Liste, Karte 4; Losert – Pleterski 2003, Liste 514.

217 Szőreg grave No. 23 (Csallány 1961, 155, Taf. 183/5) and 68 (Csallány 1961, 161, Taf. 183/3).

218 Kajdacs (Bóna 1970–71, 61. Abb. 23/1); Pilisvörösvár (Bóna 1956, 194, Taf. 47); Szentendre grave No. 44 (Bóna 1970–71, 59, Abb. 4/3).

219 Koch 2001, 84–85.

220 Losert – Pleterski 2003, 402.

221 For the Transdanubian 'Germanic' population: Kiss 1987b; Kiss 1992; Kiss 1996; Kiss 1999/2000. Merovingian costume in Transdanubia: Vida 1995, 219–290; Vida 1996, 107–124; Vida 1999b, 367–377; Vida 2000, 161–175; Vida 2008, 18–31.

### 3.2 *Middle and Late Phase*

Contemporary with the northwestern extension of the Avar settlement area, the intensity of western influences on Middle Avar close combat weaponry declined and was limited to the broad seaxes (E.IV.C). The distribution of these weapons largely covers the northwestern part of the Carpathian Basin with an emphasis on the Vienna Basin and the Devín's Gate, which overlapped with the western extension of Avar material culture and also had contact with western, Germanic and Late Merovingian material culture.

The Late phase is characterised by an even greater extension towards the northwest, with the border of the Avar Qaganate reaching the Fischa river, and thus becoming the neighbour of the local Bavarian population. This change led to the vitalisation of these western relations, with new weapon types of western origin appearing amongst both the polearms and edged-weapons.

One of the most significant developments was the appearance of spearheads of Egling (P.III.C/3.e) and Pfullingen type (P.III.C/2.e) in the northwestern periphery of the Carpathian Basin. The existence of the Pfullingen type amongst the weaponry of the Avar was first suggested by Frauke Stein<sup>222</sup> and Jozef Zábajník,<sup>223</sup> however none of the listed examples share characteristics of Pfullingen type such as the quadrangular cross section of the socket and the rivets with hemispherical head. The spearheads of Pfullingen type are distributed only in southwestern Germany and Bavaria.<sup>224</sup>

The main characteristic of Egling type is the narrow lenticular blade, the cross section of the socket is octagonal, and the blade is often decorated by long parallel grooves.<sup>225</sup> The Egling type was first defined by F. Garscha based on burials from South Baden (Germany).<sup>226</sup> The type is dated to the end of the 7th–beginning of the 8th century,<sup>227</sup> and is characteristic for both the northern and southern group of Frauke Stein.<sup>228</sup> It was first identified among the

222 Stein 1968, 233–242.

223 Zábajník 1978, 196.

224 Stein 1967, 17.

225 Stein 1967, 16.

226 Garscha 1970, Typ 10. b–c.

227 Joachim Werner dated this type to the end of the 7th century (Werner 1955, 10), according to Frauke Stein the type was still in use at the beginning of the 8th century, since it was often found together with swords of Schlingen type (Stein 1967, 17) The Saxonian examples were classified as belonging to the 1st combination group of Jörg Kleemann (Kleemann 2002, 117), which is parallel to the group A of Stein and dated between 680 and 710 (Kleemann 2002, 294).

228 For the geographical distribution of this type: Stein 1967, Taf. 103.

Avar spearheads by Jozef Zábajník.<sup>229</sup> It is important to note that spearheads from Avar cemeteries attributed as Egling type differ from the examples from Germany, since their socket is always hexagonal (and not octagonal) and the blade is not grooved. Although the socket of Egling type spearheads are usually decorated with a rivet with hemispherical head, no such examples are known from the Avar-age Carpathian Basin, thus all of the listed spearheads can be regarded as a local variant of the Egling type.

### 3.2.1 'Hakenlanze'

The hooked spearheads (*'Hakenlanze'*, P.IV.A/1.e) with long and narrow triangular blade appeared in the northwestern periphery in the first half of the 8th century characterised by short, closed socket with two short projections of oval cross section (hooks). The hooked spearheads belong to the greater group of winged spearheads (*'Flügellanze'* in German), being representative of their early form. The spearheads with projections on their socket can be divided into three main groups which are typologically related and which can be arranged in chronological succession.

Spearheads with socket-mounts (*'Lanzenspitzen mit Schaftbeschlag'* in German) are characterised by distinct socket-mounts attached to the socket. The socket-mounts are usually two iron rods, the function of which was to strengthen the attachment of the spearhead to the shaft. In some cases these mounts were even soldered or tied on to the socket by copper wire.<sup>230</sup>

The hooked spearheads (*'Haken-'* or *'Stollenlanzenspitzen'* in German)<sup>231</sup> are characterised by two projections (hooks) of quadrangular or oval cross section on the socket, while winged spearheads (*'Flügellanze'*) are decorated with two flat wings on the edge of the socket. This was a characteristic type of the Late Merovingian and early Carolingian periods, whereas the latter type is dated to the 9th–10th century.

Research on winged spearheads has a long history, and was first identified at the end of the 19th century as a weapon of the Carolingian Empire,<sup>232</sup> however,

229 Zábajník 1978, 195–196.

230 This spearhead is already known from the Late Roman period (4th century), like the spear of grave No. 6352 of Krefeld – Gellep (Pirling – Siepen 2006, 400. Taf. 68/1. and Taf. 104/20).

231 This latter term is mainly used in the archaeological literature of Switzerland: Moosbrugger-Leu 1971, 90–92.

232 Paul Reinecke (1899, 35–38) described the origin, chronology and function of the wings of winged spearheads. Lubor Niederle (1894, 208) firstly identified this spear type as a weapon of the Carolingian Empire, and drew attention to its interethnic character. For research on these winged spearheads in the 19th century, see: Köhler 1897 and Much 1898.

their original dating was either too early<sup>233</sup> or too broad.<sup>234</sup> The function of the wings was first identified as a support to hinder deep penetration of the blade into a wound.<sup>235</sup>

Paul Reinecke was the first to distinguish hooked spearheads and spearheads with socket-mounts (*Hakenlanze* or *Lanzen mit Aufhalter*) from winged spearheads. According to his observations hooked spearheads are dated to the Late Merovingian period, while winged spearheads never occur in Merovingian burials, and are instead dated to the Carolingian period. According to his opinion these spears were of Frankish origin and manufactured in Rhenish workshops.<sup>236</sup> In contrast, Gessler's research first used only written and visual sources for his study of winged spearheads.<sup>237</sup> However, Petersen's work is one of the standards for the study of both double-edged swords and winged spearheads, dividing the Scandinavian winged spearheads into B, C and D types, with B and D types being Carolingian imports.<sup>238</sup> M. Ellehauge considered the spearheads decorated with hemispherical headed rivets on their socket as the predecessors of these winged spears. He interpreted the wings as a crossguard or supporter, and interpreted them as hunter's spears.<sup>239</sup>

Peter Paulsen tried to find a link between the spearheads with socket-mounts from the Merovingian period and the Carolingian winged spears, and identified their function as flagged spears.<sup>240</sup> He continued his research with a study of winged spearheads and the Holy Lance of the German-Roman Empire.<sup>241</sup>

A catalogue of the winged spearheads from the Netherlands was made by Jaap Ypey. He mainly concentrated on questions of pattern welding, and suggested that most winged spearheads were originally pattern welded.<sup>242</sup> The hooked spearheads ('*Hakenlanzenspitze*') were catalogued and analysed by Ursula Koch.<sup>243</sup> The most recent study of winged spearheads in Germany was

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233 Köhler (1897, 219) dated them to the 6–7th century based on their Merovingian burial context.

234 Much (1898, 139) dated them to between the 3rd and 13th century.

235 Much 1898, 138.

236 Reinecke 1899, 37–38.

237 According to his theory the wings of these spearheads were used for hanging packs on it (Gessler 1908, 45).

238 Petersen 1919, 23–26.

239 Ellehauge 1948, 21–22.

240 Paulsen 1967a; Paulsen 1967b.

241 Paulsen 1969, 289–312.

242 Ypey 1982a, 241–267.

243 Koch dated this type to the Late Merovingian period. (Koch 1982, 40–44).



by Christoph Steinacker in his MA thesis (1998 in Freiburg), a part of which has been published.<sup>244</sup>

Hungarian winged spearheads were examined by Zoltán Szabó with spectroscopy in order to study their material composition. According to the results these spearheads were made from low-carbon soft iron, and no traces of cementation could be observed.<sup>245</sup> One of the most significant studies of these winged spearheads in the Carpathian Basin was by László Kovács who listed their occurrence in the Carpathian Basin and considered their typology and chronology.<sup>246</sup>

Important studies of winged spearheads were also undertaken in various East-Central European countries, such as Poland,<sup>247</sup> the Czech Republic,<sup>248</sup> Austria<sup>249</sup> and the former Yugoslavia.<sup>250</sup> The most recent study on these spearheads from the Carpathian Basin was by a young Slovakian researcher who undertook a formal examination of these weapons, an analysis of chemical composition, and also studied the pattern welding on 36 winged spearheads from 31 sites.<sup>251</sup>

This spearhead from Devínská Nová Ves was described and studied by Ján Eisner<sup>252</sup> and László Kovács.<sup>253</sup> According to Kovács it belonged to the group of so-called '*Stollenlanzen*' (the Swiss name for hooked spearheads), and dated it to the end of the 7th and beginning of the 8th century, based on the Late Avar cast belt-set found in the burial,<sup>254</sup> and it was also assigned to hooked spearheads ('*Hakenlanzenspitze*') by Christoph Steinacker.<sup>255</sup>

The hooked spearhead had already appeared during the 4th century, as confirmed by the elite burial from Vermand (dép. Aisne, France). Ursula Koch

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244 Steinacker 1998; Steinacker 1999, 119–126.

245 Szabó 1974, 3–59. Unfortunately the sampling was only made at one point on the spear (either socket or blade) and therefore these analyses are of limited value, since the chemical composition of spears is variable.

246 Kovács 1978; Kovács 1979, Kovács 1986.

247 Kurasinski 2005, 165–213.

248 Kouřil 2005, 67–100.

249 Szameit 1987, 155–177.

250 Sekelj-Ivančan 2004, 109–128.

251 Husár 2006, 47–78.

252 Eisner 1934; Eisner 1952, 119–120.

253 Kovács 1979, 98, 104.

254 Kovács 1979, 104, footnote No. 60: he used the book of Moosbrugger-Leu (1971, 90–92) who dated these spears to the 6–7th century. It is important to note, that Peter Paulsen (1969, 295) dated the same spearheads to the 8th century.

255 Steinacker 1998, 14.



suggested a continuous development from the Late Roman examples until the end of the 7th century, but emphasised the rarity of these weapons during the 5th century.<sup>256</sup> The hooked spearheads are usually dated before the appearance of winged spearheads.

The date of appearance of these winged spearheads (*'Flügelanze'*) is still under debate. Frauke Stein classified them to his combination group 'B' which she dated to 710/720,<sup>257</sup> though Hermann Ament<sup>258</sup> and Ursula Koch<sup>259</sup> back dated the combination group 'A' and 'B' by one generation (c. 30 years) and therefore the group 'B' spearheads would have begun around 700. This chronology was also accepted by Jörg Kleemann who dated the winged spearheads to his phase III (between 730/740 and 760/770).<sup>260</sup>

There is a considerable difference between the usual dating of hooked spearheads (*'Haken-'* or *'Stollenlanze'*) in Western and Central Europe, and the chronology of the burial (8th century) as situated within Avar archaeological culture. This chronological gap is as a result of the earlier cessation of the use of *'Reihengräberfelder'* in early medieval Merovingian and Carolingian kingdoms than by the Avars. The dating of this spearhead also implies a typological argument: Ursula Koch mentioned that the blade of all of the known hooked spearheads was shorter than the socket.<sup>261</sup> According to the typology of Steinacker the blade length of winged spearheads was continuously growing at the expense of the socket length, eventually resulting in the blade length being two times longer than that of the socket. All of the cited examples from the early 8th century have a short blade and long socket.<sup>262</sup> The example from Devínska Nová Ves contradicts this dating on account of its overall proportions, and therefore we can expect similar developments amongst the hooked spearheads. This would mean that contemporary with the winged spearheads, the hooked spearheads were still in use, which could solve the chronological gap between the German and Avar chronologies.

The possibility of local production were considered in the case of Egling and Pfullingen type spearheads, as well as seaxes, though it does not seem very likely for these spearheads since their size and form are unique in the Avar-age

256 Koch 1982, 40. In fact the spear from Vermand is of socket-mount, see Peter Paulsen 1967b; Paulsen 1969, 295.

257 Stein 1967, 104–110.

258 Ament 1976, 336; Ament 1977.

259 Koch 1982, 24.

260 Kleemann 2002, 293–295.

261 Koch 1982, 41. footnote No. 9.

262 Steinacker 1998, 22.

Carpathian Basin. Instead they seem to be imported weapons from a period when these weapon burial rites were no longer exercised in the western territories, and they had not yet appeared in Moravia and old Croatia (Dalmatia). This type is therefore regarded as a transitional type.

### 3.2.2 Edged Weapons

#### 3.2.2.1 *Spathae*

Similarly intensive relations can be observed in the case of edged weapons of the 8th century. From the beginning of the 8th century the long seaxes became a widely spread and common single-edged weapons. Double-edged *spathae* were used but in much smaller numbers (E.I.A/2.a). These swords differ from the early *spathae*, since these examples from the 8th century always have iron crossguard and pommel.

The classification of the 8th-century *spathae* focused mainly on the crossguard and pommel ('*Gefäß*' in German) of the sword, its blade only seldom being examined. The basic classification was created by Elis Behmer,<sup>263</sup> and later Frauke Stein studied the double-edged swords from the 8th century<sup>264</sup> who also described examples from the Carpathian Basin.<sup>265</sup> Double-edged swords from Viking-period Scandinavia were studied by Jan Petersen, however, most of these swords date to later periods (9th–10th centuries).<sup>266</sup> His classification was based on the fittings of the hilt, mainly the pommel, and it has proved the most used division of these double-edged swords.<sup>267</sup> Research on double-edged swords was readdressed by Alfred Geibig who emphasised a combined classification of pommel, crossguard and blade, the latter hitherto a neglected field. Based on his classifications of the pommel, crossguard and blade, Geibig created 19 combination types for hilt-fittings ('*Gefäß*') and 14 types of blade, meaning these weapons were addressed more completely, being comprised of several different parts.<sup>268</sup>

The identification of a narrower type of this sword is difficult to establish, since only top-view or plan and cross section drawings are available and which focus on the pommel. It seems likely that it belongs to the Petersen B type, thus

263 Behmer 1939.

264 Stein 1967, 9–12.

265 Stein 1968, 239.

266 Petersen 1919, 50–180.

267 This classification was followed by Kirpichnikov (1966), Kovács (1990, 39–4; Kovács 1993, 45–60; Kovács 1994–95, 153–189) and Ewart Oakshott (1964).

268 Geibig 1991, 20–21.

earlier than the 9th century.<sup>269</sup> This sword is later than the so-called Schlingen type, which is characterised by a small rectangular pommel on a flat pommel-plate (*'Knaufplatte'*). This pommel can be compared to the Niederrahmstadt – Dettingen – Schwabmühlhausen type of Stein,<sup>270</sup> although this attribution is not certain because of the lack of detailed drawings. The sword belongs to the 1st combination type of Alfred Geibig according to its hilt fittings (pommel and crossguard), which is dated by the Pfullingen type spearheads to the first half of the 8th century, although a later date (second half of the 8th century) is equally possible.<sup>271</sup>

### 3.2.2.2 *Seaxes*

The relative popularity of broad and long seaxes was due to their single-edged blade and their functional similarity to single-edged swords, and therefore their use did not differ much from general Avar close combat weapons. Artefacts of western origin are concentrated on the northwestern periphery of the Avar Qaganate, but such finds can also be found in the western part of the Carpathian Basin, such as in the Zala valley.

## 3.3 *Questions in the Research on Seaxes*

Seaxes are single-edged short-bladed weapons. Their origins are not yet clear, though long war knives or narrow seaxes (*'Schmalsaxe'* in German) of the Hun period or early long seaxes (*'Langsaxe'*) could have played a significant role in their development.<sup>272</sup> Joachim Werner regarded the long seaxes (*Langsaxe*) of the Hun period as the predecessors of sabres, and he connected the Western and Central European appearance of seaxes with the Hun migration,<sup>273</sup> establishing the general view of an eastern origin for these seaxes.<sup>274</sup>

The classification of seaxes is basically a metric one. Their first classification was made by Ludwig Lindenschmidt who distinguished types based on metric differences, though he inferred these were contemporary, their differences being functional instead.<sup>275</sup> The chronological significance of the different

269 Petersen 1919.

270 Stein 1967, 9.

271 Geibig 1991, 25–31. Abb. 2, 140.

272 These weapons were already regarded as the first stage in the evolution of seaxes by András Alföldi (1932, 26) and Gjessing (1934, 69).

273 Werner 1956, 43.

274 Olsen 1946; Anke 1998, 93–99.

275 Lindenschmidt (1880, 204) distinguished seaxes (short throwing knives), long seaxes (long edged-weapons for thrusting and cutting) and scramasaxes (edged-weapons with wide blade).

sizes of seaxes was first recognised by Edmund Brenner.<sup>276</sup> Hermann Stoll first emphasised the development of these seax blades, suggesting a late date on the basis of the Hailfingen cemetery.<sup>277</sup> The recently devised terminology of seax types, such as narrow (*Schmalsax*), wide (*Breitsax*) and long seax (*Langsax*), was suggested by Kurt Böhner.<sup>278</sup> Neuffer-Müller introduced a new type, the short seaxes (*Kurzsax*) a few years later.<sup>279</sup>

This metric approach was also widely used to define smaller distinctions, like the type of wide seaxes ('*Breitsax*' in German) which were later subdivided into an earlier light variant and a later heavy variant by Ursula Koch.<sup>280</sup> This subdivision was also verified by an analysis of the horizontal stratigraphical of the Rügenach cemetery.<sup>281</sup> The classification and chronology of these seaxes was elaborated on by Rainer Christlein in the study of the Marktoberdorf cemetery, and in respect of their dating used the length of the blade and the chronology of the associated belt-sets.<sup>282</sup>

An important stage in their research was the work by Frauke Stein on 8th century 'nobility graves' ('*Adelsgräber*' in German), as it made possible the comparison of the Late Avar and Late Merovingian—Early Carolingian weapons. This material was especially important for Avar archaeology from a chronological point of view.<sup>283</sup>

These metric studies played a significant role in the research on seax blades, wherein a general tendency from short and narrow blades to long and wide blades was observed.<sup>284</sup> This metric approach was most radically applied by Wolfgang Hübener who ascribed chronological relevance to differences of mere millimeters.<sup>285</sup> However, it is obvious that such even development cannot be attributed to seax blades.

New research perspectives on these seaxes were contributed by Herbert Westphal who used attributes of forging techniques (like pattern welding) as

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276 Brenner 1912, 290.

277 Stoll 1939.

278 Böhner 1958, 130, 135.

279 Neuffer-Müller 1966, 28.

280 Ursula Koch (1968, 84) made this division based on the weapons found near the Bavarian Danube-valley.

281 Ament 1973, 138. Taf. 60,2.

282 Christlein 1966, 30.

283 Stein 1967, 12–16.

284 Giesler 1983, 528.

285 According to his view the absolute chronology of a seax can be identified on the basis of its blade length, wherein he supposed an increase of 2.13 cm for every decade, which would mean 2.13 mm increase every year (Hübener 1988, 228).

an addition to formal attributes in the classification of these weapons. He also made the important observation that broad seaxes (*'Breitsax'*) do not occur in Saxonia.<sup>286</sup> This northern area remained important for the seax studies, and Jörg Kleemann attempted to refine the chronology of long seaxes (*'Langsaxe'*) in this region.<sup>287</sup> Besides broad and long seaxes a new transitional type was identified by Susanne Buchta-Hohm.<sup>288</sup>

The newest classification for the seaxes was by Jo Wernard, who distinguished four main types (*'Schmalsax'*, *'Kurzsax'*, *'Breitsax'* and *'Langsax'*) which were arranged typologically, his primary observation being the sudden change between the broad seax and long seax.<sup>289</sup>

The Carolingian cemeteries of northern Bavaria were studied by Ralph Pöllath, and chronological examination was also of relevance for Avar archaeology.<sup>290</sup>

Research on these seaxes started somewhat later in the Carpathian Basin. Seaxes in Avar cemeteries were first identified by Ján Eisner,<sup>291</sup> and Attila Kiss described seaxes from Avar cemeteries in his unpublished MA thesis, where he linked their appearance to a Carolingian weapon trade.<sup>292</sup> Research on this weapon type has mainly been limited to the northern and western periphery of that area occupied by the Avar Qaganate, partly because the main distribution of these weapons overlaps in this area. The first summary of these seaxes was by Jozef Zábajník, in his survey of weapons of western origin in Avar burials.<sup>293</sup> Long knives found in Avar burials in the Carpathian Basin were also studied

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286 The monograph of Herbert Westphal (1991, 272) offered metallographical analyses of seaxes from Saxonia. His observation on the lack of broad seaxes (*'Breitsax'*) questioned the universal character of the development of seax blades.

287 Jörg Kleemann (2002, 107–109) distinguished long seaxes with central tip (1st type) and those with tip at the edge (2nd type), and according to his view the 1st type is earlier than the 2nd.

288 Buchta-Hohm termed these atypical long seaxes a transitional type. According to her dating these weapons are earlier than the long seaxes. (Buchta-Hohm 1996, 37).

289 Wernard (1998, 769–782) followed the metric school, his main attributes being the blade length and blade width.

290 Pöllath (2002, 168–170) distinguished four main groups based on the form of the blade. He followed Jörg Kleemann in his classification. On chronological issues: Pöllath 2002, 174–193.

291 Eisner 1932, 553–559.

292 Kiss listed 12 examples. He regarded the appearance of seaxes as a Late Avar phenomenon in the 8th century. He observed their distribution in the western part of the Carpathian Basin. (Kiss 1962, 90–92).

293 Zábajník 1978, 193–195.

by János Győző Szabó who regarded them as weapons, though he rejected any relationship to seaxes.<sup>294</sup>

Erk Szameit studied seaxes from Avar-age burials in his paper on Carolingian weapons from Austria. He described their main distribution as in the Vienna Basin and dated them to the second half of the 7th and the 8th century. He regarded some of them as Avar copies of Frankish products.<sup>295</sup> Seaxes are treated as Carolingian imports in more recent Austrian research.<sup>296</sup>

Béla Miklós Szőke observed the popularity of the seaxes in the Late Avar period (8th–9th century), and argued that they were not unknown to the Avars, despite some being western imports which suggests that such weapons were suitable for the fighting techniques of the Avars.<sup>297</sup>

### 3.4 *Chronological Problems of Seaxes and the Difficulties of Chronological Synchronisation*

The chronology of Avar seaxes is significant not only for weapon research but for the whole periodisation of the Avar Age. The chronology of these weapons will be elaborated on in relation to south Germany as a basis for wider alignments, as their dating in this region is of great importance.

The chronological schemes of both the Late Merovingian and Early Carolingian periods are largely similar in describing the typological development of seax blades, with only minor differences, and it is generally agreed that the chronological boundary between broad and long seaxes was at the end of the 7th and beginning of the 8th century,<sup>298</sup> around 680. However, the long

294 Szabó 1966, 50; Szabó 1968, 40.

295 Szameit 1987, 164.

296 Falko Daim (1998, 108–109) treated seaxes as imports and used them to determine chronological alignments.

297 In spite of the popularity of seaxes in Avar cemeteries, double-edged swords were mainly used in Moravia, the Eastern Alps, Slavonia and Dalmatia (Szőke 1992a, 95; Szőke 1999, 85). Szőke first linked the appearance of seaxes to events at the end of the 8th century (Carolingian wars) (Szőke – Vándor 1982–83, 73–74) but later noted that these weapons were already in use during the 7th century in the Zala valley (Szőke 2002; Szőke 2007, 141).

298 Kurt Böhner (1958, 22, 31, 33) dated narrow seaxes to his II–IIIrd phase, the broad seaxes to the IVth phase (7th century) and long seaxes to the Vth phase (first half of the 8th century). Ursula Koch (1977, 107) dated the appearance of light broad seaxes to the 4th phase of the Schretzheim cemetery (590/600–620/30), while she dated the heavy variants to the 5th phase (620/630–650/60) (Koch 1977, 29, 107). The first appearance of long seaxes was dated by the belt-sets of honeycomb ornament to the years 670/80s. These seaxes remained in used until the beginning of the 9th century (Koch 1995, 190–194). Frauke Stein (1967, 110) distinguished three groups based on weapon combinations. She

seaxes only appeared during the first half of the 8th century in the Carpathian Basin, and are not yet known from the Middle phase.<sup>299</sup> The contradiction between the western chronology for long seaxes and the beginning of the Late phase was noted by Falko Daim in his analysis of the Leobersdorf cemetery. He proposed two dates for the beginning of the Late phase: 710 based on weapons of western origin and 730 following the general Avar chronology.<sup>300</sup>

The existence of long seaxes in Avar burials provides an important basis for establishing the beginning of the Late phase. According to current understanding there is a chronological difference of 20–30 years between the beginning of the Late phase and the western appearance of long seaxes. There are three possible explanations for this chronological gap:

- 1) Weapons of western origin appear in the Avar settlement area with a delay of 20–30 years, though this assumption can be proved only by their association with other artefacts dated usually to earlier periods.
- 2) The beginning of the Late phase is too late, and should be corrected to the last third of the 7th century. The main problem with this is that there is also a similar disparity between the chronology of the Carpathian

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dated group 'A' between 680 and 710/720, group 'B' between 710/20 and 750, and group 'C' between 750 and 800. The transitional group 'A/B' was based on the co-existence of two different spatha types. Group 'A' is characterised by long seaxes of type 'LS 1', while group 'B' is characterised by long seaxes of type 'LS 2' and 3. Stein's chronology was reviewed by Wolfgang Hübener (1971, 445) and Hermann Ament (1976, 321). Hübener disagreed with the late dating of the belt-sets of honeycomb-decoration ('*wabenplattierte*' in German) (Hübener 1971, 445), while Ament proposed the term 'jungmerowingisch III' (Late Merovingian III: 670/80–720) for Stein's weapon combination 'A', drawing attention to the fact that this period unified two different chronological phases (Ament 1976, 335). Jörg Kleemann (2002, 107–109) dated the long seaxes with symmetrical blade (1st type) to his first two phases (680–710), and asymmetrical blades to his IIInd–IVth phase (710–810) (Kleemann 2002, 294). Jo Wernard (1998, 778) dated the light variant of broad seaxes to the 2b phase (600/610–630/640) and the appearance of the heavy variant to 3b phase (630/40–660/670), though this variant only became dominant in following 3c transitional phase (660/670–680), and the first long seaxes only appeared during the 4th phase (c. 680–720/730) (Wernard 1998, 779–780).

299 Falko Daim (1987, 159) dated the beginning of the Late phase to 710/720s, while Jozef Zábajník (1991, 248) proposed an earlier date (c. 700).

300 Daim 1987, 159. According to the chronology of artefacts of western origin, even the date around 710 seems to be too late.

Basin and that of the Eastern European steppes, and any change would make the latter even longer.<sup>301</sup>

- 3) The chronology of the Late Merovingian—Early Carolingian (8th century) cemeteries of south Germany is too early. The main chronological argument for the end of these cemeteries is the disappearance of ‘*Reihengräberfelder*’. This process could have happened across a range of dates throughout the western area, meaning that some degree of chronological shift is possible. The internal chronological scheme for the Avar Age, however, still agrees with the chronology of Frauke Stein.<sup>302</sup>

The weapon trade of the Late Avar period is also been described in written sources. A *capitulare* of Charlemagne issued in 805 prohibited the weapon trade with Slavic tribes and the Avars, and named two checkpoints for controlling the fulfilment of this order along the Danube: at Passau and Regensburg.<sup>303</sup> Both of these cities are situated in Bavaria on the Danube suggesting the river as the main route towards the Avars, though the finds in Zala county would also seem to suggest the existence of a southern route.

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301 The absolute chronology of the Middle Avar Tótipuszta – Igar horizon and their eastern analogies contradicts this theory.

302 Stein 1967, 110.

303 *Capitulare* 44, 7 p. 123. see: Szádeczky-Kardoss 1992, 307; Pohl 2002, 195.



## Armament and Society

### 1 Deposition of Weapons in Burials—Cemeteries and Regional Differences

Most of the studied polearms and edged weapons were found in burials. The exceptions are spearheads found in ‘sacrificial complexes’ together with elements of horse-harness (16 sites, 22 spearheads). These complexes are mostly without any archaeological observations therefore in the following statistics they will be presented as stray finds. As a result the study of the deposition of weapons in graves and their position in the burial is indispensable for the research on social significance of these artefacts.

The deposition of weapons depends on various factors, including their size and burial custom, as well as magic and beliefs of the community arranging the funeral like arrowheads and armour-lamellae from female and child burials, which were probably used as amulets showing that the weapon burial rite was basically a symbolic one, and in most of cases buried weapons did not serve their original function.

The patterns of weapon deposition in burials differ largely by regions once inhabited by the Avars, therefore some geographical notes will be made. The area of Carpathin Basin is 300,000 km<sup>2</sup> only two thirds of which (around 150,000 km<sup>2</sup>) were populated by the Avars. In what follows, distribution of both polearms and edged weapons will be discussed in five regions: Transdanubia, Danube – Tisza interfluvium, Transistria, Transylvania and northwestern periphery (including Southwestern Slovakia, Vienna Basin and Lower Austria, see map 1). The area of all these regions covers about 50,000 km<sup>2</sup>.

Polearms and edged weapons were found in 421 sites, 85 of them are stray finds (including sacrificial complexes without archaeological research) and 336 of them are cemeteries. Most of these sites are only small excavated parts of larger cemeteries, in 48 cases only one grave was excavated, while in 54 cases less than ten burials.

Number of graves	Number of cemeteries	Number of polearms	Number of edged weapons
1	48	12	44
2–10	52	13	61
11–50	59	37	82
51–99	39	55	58
100–500	76	196	202
500–1000	19	100	125
above 1000	4	189	28

Only 99 cemeteries consisted of more than 100 graves: their list is shown by the chart below including the number of polearms and edged weapons as well as their percentage compared to the total number of graves in the cemetery.

Site	Polearms	Edged weapons	Number of graves	% Polearms	% Edged weapons
1 Szekszárd–Tószegi dűlő	32	9	2,500	1.28	0.36
2 Zamárdi–Rétiföldek	28	6	2,226	1.26	0.27
3 Budakalász–Dunapart	61	3	1,566	3.89	0.19
4 Tiszafüred – Majoros	68	10	1,283	5.3	0.78
5 Győr–Téglavető		13	900		1.44
6 Bratislava–Devínska Nová Ves	29	8	873	3.32	0.92
7 Želovce		20	873		2.29
8 Szekszárd–Bogyiszlói út	17	7	786	2.16	0.89
9 Holiare	2	6	785	0.25	0.76
10 Zillingtal		7	750		0.93
11 Vörs–Papkert B	2	1	716	0.28	0.14
12 Alattyán		1	712		0.15
13 Wien 11. Simmering–Csokorgasse		16	705		2.27
14 Gyöng–Vásártér	2	2	700	0.28	0.28
15 Kölked–Feketekapu A	25	14	683	3.66	2.05
16 Kölked–Feketekapu B	5	7	662	0.75	1.05
17 Zalakomár–Lesvári dűlő	3	7	585	0.51	1.19

(cont.)

Site	Polearms	Edged weapons	Number of graves	% Polearms	% Edged weapons
18 Cikó	5	2	552	0.91	0.36
19 Pécs–Kertváros	1		549	0.18	
20 Székkutas–Kápolna-dűlő		1	534		0.18
21 Szegvár–Oromdűlő	8	13	525	1.52	2.48
22 Nové Zámky (Érsekújvár)	1		514	0.19	
23 Vác–Kavicsbánya	3	2	514	0.58	0.38
24 Mödling–Goldene Stiege		2	497		0.4
25 Halimba–Belátó-domb		1	486		0.21
26 Vasasszonyfa		3	468		0.64
27 Csákberény– Orondpuszta	16	2	452	3.54	0.44
28 Táp–Borbapuszta		5	446		1.12
29 Jászapáti–Nagyállás út		10	412		2.42
30 Dunaújváros–Simonyi dűlő	1	1	400	0.25	0.25
31 Szentés–Nagyhegy	1	2	385	0.26	0.52
32 Košice–Šebastovce	23	5	380	6.05	1.31
33 Szeged–Fehértó A		5	376		1.33
34 Sükösd–Ságod		1	369		0.27
35 Szeged–Makkoserdő		2	339		0.59
36 Szeged–Kundomb	1		319	0.31	
37 Mosonszentjános		6	316		1.89
38 Mezőfalva–Vasútállomás	9		310	2.9	
39 Kehidakustyán–Kehida, Központi Tsz-major	4	5	302	1.32	1.65
40 Gyenesdiás–Algyenes	1	1	301	0.33	0.33
41 Gátér–vasútállomás	2	4	300	0.66	1.33
42 Brateiu 3	5	4	294		1.01
43 Ártánd–Kapitány-dűlő		1	282		0.35
44 Veszprém–Jutas	3		281	1.07	
45 Mosonszentpéter	3	1	280	1.07	0.48
46 Štúrovo–Obid	6	4	280	2.14	1.42
47 Üllő I. Disznójárás		2	270		0.74
48 Záhorská Bystrica		5	262		1.91

Site	Polearms	Edged weapons	Number of graves	% Polearms	% Edged weapons
49 Jánoshida–Tótképuszta		4	259		1.54
50 Szekszárd–Palánk		2	259		0.77
51 Edelstal–Bergweide		5	257		1.95
52 Kaposmérő–Agyagbánya	1	1	254	0.39	0.39
53 Wien 23. Zwölfaxing		2	252		0.79
54 Pókaszpetk	24	3	248	9.67	1.21
55 Orosháza–Bónum- téglagyár		1	245		0.41
56 Romonya I. Hirdihát		1	238		0.42
57 Csongrád–Felgyő		1	236		0.42
58 Várpalota–Gimnázium	7		235	2.98	
59 Čataj	5	4	233	2.15	1.72
60 Privlaka–Gole nyive		1	230		0.43
61 Kaposvár–Toponár–40. számú őrház	3		217	1.38	
62 Kiskőrös–Város-alatt		3	213		1.41
63 Keszthely, Fenékpuszta, Pusztaszentegyházi dűlő		1	212		0.47
64 Kisköre–Halastó		4	211		1.89
65 Sommerein am Leithagebirge		1	211		0.47
66 Makó–Mikócsa halom		8	207		3.86
67 Valalíky–Všechsvätých	5	4	204	2.45	1.96
68 Band	8	1	187	4.28	0.53
69 Regöly–Kupavár	2		179	1.11	
70 Kaposvár–Toponár– Fészerlak	1		176	0.57	
71 Szentés–Lapistó	1	1	172	0.58	0.58
72 Budapest xx. Soroksár–Rétek		2	170		1.17
73 Vrbas–ciglana Polet	1		158	0.63	
74 Rácalmás–Rózsamajor	13	1	157	8.28	0.63
75 Komárno–8 Shipyard	11	10	153	7.19	6.53
76 Leobersdorf–Ziegelei Polsterer		2	153		1.31
77 Üllő 11–Vecsési községátár		1	153		0.65

(cont.)

Site	Polearms	Edged weapons	Number of graves	% Polearms	% Edged weapons
78 Környe	11	26	152	7.24	17.1
79 Bratislava–Čunovo		5	151		3.31
80 Hajdúböszörmény– Csíkos-tanya		1	150		0.66
81 Hajós–Cifrahegy		1	150		0.66
82 Balatonfűzfő–Szalmássy telep		1	146		0.68
83 Radvaň nad Dunajom–Virt	6		139	4.31	
84 Szeged–Fehértó B		15	131		11.45
85 Solymár–Dinnyehegy		1	130		0.77
86 Visznek–Kecskehegy		1	127		0.78
87 Pilismarót–Öregék dűlő	1		122	0.82	
88 Cifer–Pác I. Nad mly- nom I.	1		119	0.84	
89 Bačko Petrovo Selo–Čik		1	118		0.85
90 Tiszavasvári–Petőfi u. 49. (Kabai Lajos telke)	1	1	112	0.89	0.89
91 Gerjen–Váradmajor		1	110		0.91
92 Nagykőrös–Száráz dűlő		1	107		0.93
93 Bányog–Gyűrhegy		2	106		1.88
94 Csengele–Feketehalom	1		105	0.95	
95 Tiszaderzs–Szentimrei út	10	2	102	9.8	1.96
96 Visonta–Nagycsapás		1	102		0.98
97 Budapest XXI. Csepel–Háros	7		101	6.93	
98 Tiszalök–Kövestelek		1	100		1
99 Tiszavárkony– Hugyinpart	1	5	100	1	5
	488	357	38,059	1.28	0.94

Polearms are known from 160 Avar-age cemeteries (maps 2–4, while edged weapons are distributed in 349 sites (maps 24–26). Only one spearhead or one edged weapon were found in most of these sites (polearms in 96 cases and edged weapons in 253 cases). Multiple close-combat weapons from a single site are much fewer, two spearheads were only found in 19 cemeteries, while two edged weapons were only found in 36 sites. The maximum number of spearheads from a cemetery is 68, while in the cases of edged weapons it is only 26. As a result of a statistical analyses of the numerical batches of polearms' and edged weapons' distribution in various cemeteries both of them show a power law distribution where the number five is considered to be outlier in both cases. As a consequence the cemeteries with more than five polearms or edged weapons will be presented below.

More than five polearms in a cemetery were only found in 30 cases 16 sites of which are situated in Transdanubia, and are dated to the Early Phase. Only three such cemeteries are located in the Great Hungarian Plain (all of them in Transtisia). The number of Slovakian sites with more than five spearheads is nine, and they are dated to the Late phase, while that of Transylvanian sites is only two.

	Site	Number of polearms	Region
1	Tiszafüred–Majoros	68	Transtisia
2	Budakalász–Dunapart	61	Transdanubia
3	Szekszárd–Tószegi dűlő	32	Transdanubia
4	Devinská Nová Ves	29	Slovakia
5	Zamárdi–Rétiföldek	28	Transdanubia
6	Kölked–Feketekapu A	25	Transdanubia
7	Pókaszepetk	24	Transdanubia
8	Košice–Šebastovce	23	Slovakia
9	Szekszárd–Bogyiszlói út	17	Transdanubia
10	Csákberény–Orondpuszta	16	Transdanubia
11	Rácalmás–Rózsamajor	13	Transdanubia
12	Környe	11	Transdanubia
13	Komárno 8. Shipyard	11	Slovakia
14	Tiszaderzs–Szentimrei út	10	Transtisia
15	Mezőfalva–Vasútállomás	9	Transdanubia
16	Radvaň nad Dunajom–Žitavská Tôň	9	Slovakia
17	Előszállás–Bajcsihegy	8	Transdanubia

(cont.)

	Site	Number of polearms	Region
18	Band	8	Transylvania
19	Szegvár–Oromdűlő	8	Transtisia
20	Budapest XXI. Csepel–Háros	7	Transdanubia
21	Várpalota–Gimnázium	7	Transdanubia
22	Radvaň nad Dunajom–Virt	6	Slovakia
23	Gâmbaş	6	Transylvania
24	Štúrovo	6	Slovakia
25	Valaliký–Všechsvätých	5	Slovakia
26	Komárno 3. Váradiho u.	5	Slovakia
27	Čataj	5	Slovakia
28	Cikó	5	Transdanubia
29	Bóly–Sziebert puszta	5	Transdanubia
30	Kölked–Feketekapu B	5	Transdanubia

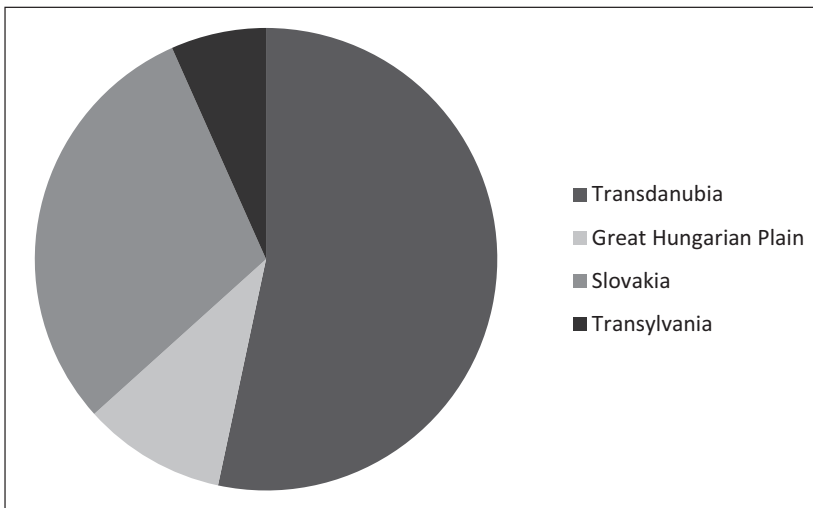


DIAGRAM 10 *Distribution of sites with more than five polearms.*

The maximum number of edged weapons from a cemetery is 26 specimens (Környe), while more than five edged weapons were found only in 33 cemeteries among which eleven is in Transdanubia, six in the Danube – Tisza interfluvium, seven in Slovakia, five is in Austria, three in Transistria and only one in Transylvania. The sites in Transdanubia date to the Early Phase, that of Danube – Tisza interfluvium mainly to the Middle phase, while the Austrian and Slovakian sites are from the Late phase.

	Site	Edged weapons	Region
1	Környe	26	Transdanubia
2	Želovce	20	Slovakia
3	Wien 11-Simmering-Csokorgasse	16	Austria
4	Szeged-Fehértó B	15	Danube – Tisza interfluvium
5	Kölked-Feketekapu A	14	Transdanubia
6	Győr-Téglavető	13	Transdanubia
7	Szegvár-Oromdűlő	13	Transistria
8	Tiszafüred-Majoros	10	Transistria
9	Jászapáti-Nagyállás út	10	Danube – Tisza interfluvium
10	Komárno-8 Shipyard	10	Slovakia
11	Szekszárd-Tószegi dűlő	9	Transdanubia
12	Bratislava-Devínska Nová Ves	8	Slovakia
13	Makó-Mikócsa halom	8	Transistria
14	Szekszárd-Bogyszlói út	7	Transdanubia
15	Zillingtal	7	Austria
16	Kölked-Feketekapu B	7	Transdanubia
17	Zalakomár-Lesvári dűlő	7	Transdanubia
18	Noşlac	7	Transylvania
19	Zamárdi-Rétiföldek	6	Transdanubia
20	Holiare	6	Slovakia
21	Mosonszentjános	6	Transdanubia
22	Kunpeszér-Felsőpeszéri út	6	Danube – Tisza interfluvium
23	Wien 23-Liesing	6	Austria
24	Táp-Borbapuszta	5	Transdanubia
25	Košice-Šebastovce	5	Slovakia
26	Szeged-Fehértó A	5	Danube – Tisza interfluvium
27	Kehidakustyán-Kehida, Központi Tsz-major	5	Transdanubia
28	Záhorská Bystrica	5	Slovakia



(cont.)

	Site	Edged weapons	Region
29	Edelstal–Bergweide	5	Austria
30	Bratislava–Čunovo	5	Slovakia
31	Tiszavárkony–Hugyinpart	5	Danube – Tisza interfluve
32	Tizsakécske–Óbög	5	Danube – Tisza interfluve
33	Vösendorf	5	Austria

As shown by the tables above there are cemeteries where the number of polearms surpass that of the edged weapons. This case is true for the large Early Avar period cemeteries of Transdanubia (Budakalász–Dunapart, Szekszárd–Tószegi dűlő, Zamárdi–Rétiföldek, Kölked–Feketekapu A, Pókaszepetk, Szekszárd–Bogyiszlói út, Csákberény–Orondpuszta and Rácalmás–Rózsamajor) and two Early Avar cemeteries of Transtisia (Tiszafüred–Majoros and Tiszaderzs–Szentimrei út), while there are some similar cemeteries in Slovakia (Devínska Nová Ves and Košice–Šebastovce).

Quite the contrary is observed on a number of cemeteries where in spite of the edged weapons buried in graves no polearms were found in three regions: 1. the Great Hungarian Plain (mainly from the Danube – Tisza interfluve area): Szeged–Fehértó A and B, Jászapáti–Nagyállás út, Jánoshida–Tótkérpuszta, Kisköre–Halastó etc.); 2. northwestern Transdanubia (so-called Little Hungarian Plain): Győr–Téglavető, Mosonszentjános, Táp–Borbapuszta,

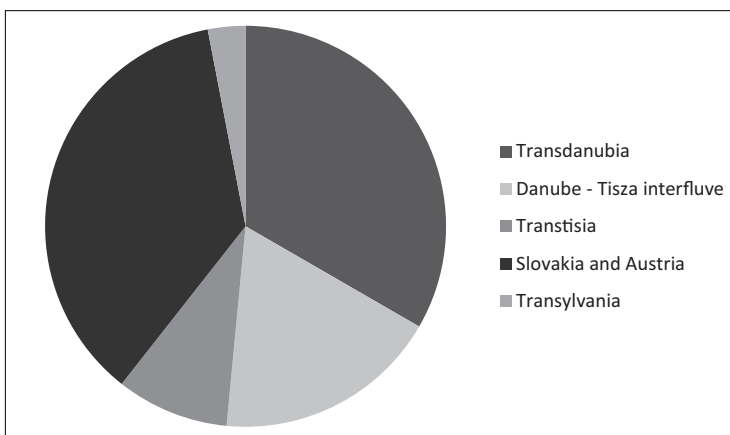


DIAGRAM 11 *Distribution of sites with more than five edged weapons.*

Bágyog–Gyűrhegy); 3. Slovakia and Austria surrounding the former region: Želovce, Wien 11—Simmering-Csokorgasse, Zillingtal, Záhorská Bystrica, Edelstal–Bergweide, Bratislava–Čunovo.

As a result the distribution of edged weapons is more uniform than that of the polearms which shows huge regional differences which are even noticeable in absolute numbers:

Region	Polearms	568–650	650–700	700–800
Transdanubia	363	148	18	24
NW-periphery	119	6	5	114
Danube-Tisza interfluve	30	28	1	2
Transtisia	106	32	12	58
Transylvania	27	23	1	3

Most Avar-age spearheads were found in Transdanubia (363 examples) and on the northwestern periphery of the Qaganate (119 pieces), while the number of spearheads from Transtisia (106 examples), Danube – Tisza interfluve (30) and Transylvania (27) are much lower. The proportion of polearms found in these regions is shown by the diagram below.

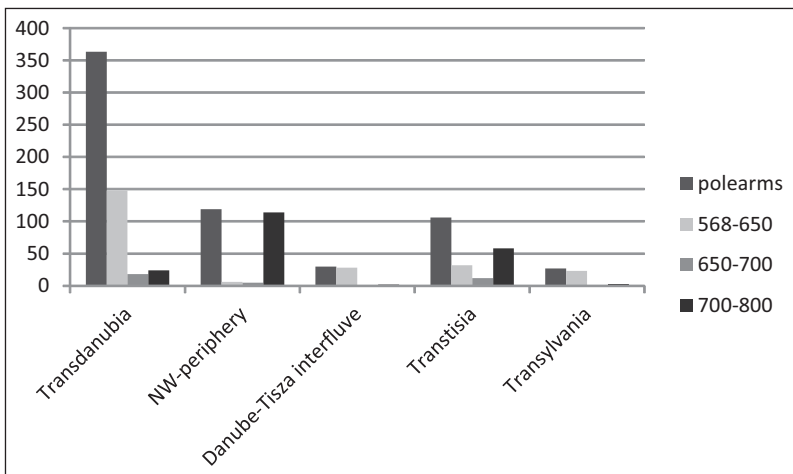


DIAGRAM 12 *Distribution of polearms by regions (EA = Early Avar, MA = Middle Avar, LA = Late Avar).*

These differences between the listed regions are even greater during the Early Avar period (late 6th–first half of 7th centuries): more than half of the spearheads were found in Transdanubia (148 specimens), 32 Early Avar polearms are known from Transtisia and 28 from the Danube – Tisza interfluve, while Transylvania is only represented by 23 spearheads (map 2). The only Slovakian site dated to this period is Radvaň nad Dunajom–Virt, with only six polearms.

This result speaks for itself, showing that the great majority of the early spearheads come from Transdanubia. This disproportionate distribution cannot be explained exclusively by the differences in weaponry, though without doubt there are certain differences in the weapon types of the western and the eastern half of the Carpathian Basin, such as the complete lack of broad lenticular spearheads (P.III.A/1) or narrow lenticular spearheads used as javelins (P.III.B/1) in the Great Hungarian Plain. The distribution of reed-shaped spearheads (P.I.B) is more even between the Great Hungarian Plain and Transdanubia, however, this type is more frequent in Eastern Transdanubia.

Only 39 spearheads are known from the Middle Avar period, 18 of them being found in Transdanubia, five in Southwestern Slovakia, one in Transylvania, one in the Danube – Tisza interfluve and 12 in Transtisia (map 3). The dominance of Transdanubia observed during the Early phase ceased and the proportion of the Great Hungarian Plain rose during this period, although 61 % of the spearheads of this phase were found in Transdanubia (together with those from the Danubian alluvium). The decreasing number of spearheads cannot be explained only by the short duration (c. 50 years) of the Middle Avar period.

200 spearheads are known from the Late Avar period, most of them from burials (map 4). Significant changes occurred in the spatial distribution of polearms during this phase: the role of Transdanubia decreased (only 24 examples), whilst the significance of the Great Hungarian Plain rose (58 spearheads from Transtisia and two from the Danube – Tisza interfluve), and there is a shift towards peripheral areas: more than half of the known 8th-century spearheads were found either in Slovakia or in Austria. This latter feature is mainly emphasised by Slovakian research suggesting mixed Slavic-Avar population and a material culture characteristic of this northern periphery.<sup>1</sup>

As shown by the diagram above the deposition of polearms is regionally very unbalanced probably due to the various patterns of burial rite related to weapons.

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1 Zábójník 1995; Zábójník 2004.

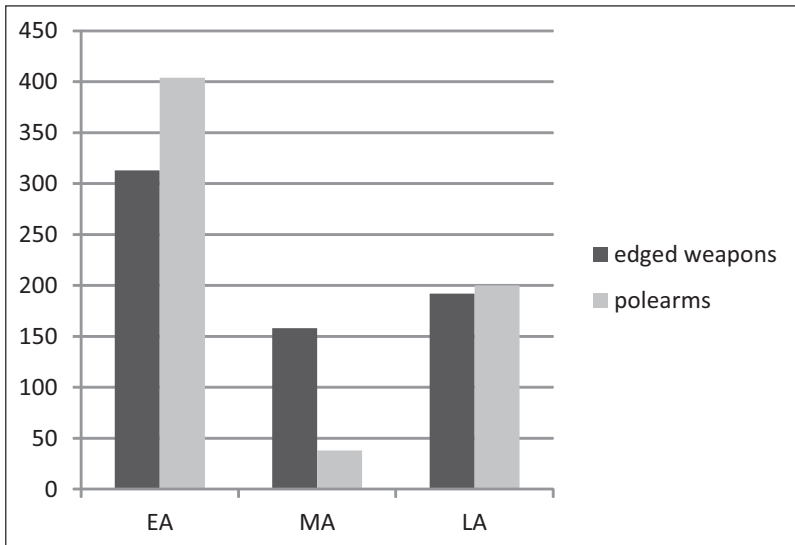


DIAGRAM 13 *Chronological distribution of Avar-age edged weapons and polearms.*

## 2 The Deposition of Polearms and Edged Weapons in Burials— Chronology and Combinations

As only around 1 % of the graves from the examined cemeteries contained polearms or edged weapons, the deposition of close-combat weapons in graves can be regarded as a rare phenomenon. 704 edged weapons and 658 polearms are known from the Avar Age, and although there is a decline in weapon deposition during this period, the end of this era still saw some weapon burials.

The above diagram shows the number of edged weapons and polearms by each phase of the Avar Age. While 315 edged weapons are dated to the Early phase, only 162 examples are known from the Middle phase and 188 examples from the relatively long Late phase.<sup>2</sup> Taking into consideration the relative shortness (c. 50 years) of the Middle phase compared to the Early (c. 80 years) and Late phases (c. 100 years), a continuous process whereby there is a decreasing number of such weapons can be observed.

<sup>2</sup> Edged weapon/year values of each period: Early Avar period: 3.91 edged weapons/year, Middle Avar period: 3.16 edged weapons/year, Late Avar period: 1.92 edged weapons/year.

A similar process can also be observed in the case of polearms, and the very small quantity of spearheads during the Middle phase is particularly striking. 407 spearheads are dated to the Early phase, but only 39 spearheads can be definitively dated to the Middle phase, while the number of Late Avar polearms is 200.<sup>3</sup> The very small quantity of Middle phase polearms can be explained by the shortness (circa 50 years) of the, and therefore most of the examples with uncertain chronology are usually dated to either the Early or Late phase instead.

Polearms and edged weapons were rarely combined with one another: only 42 such cases are known from the whole Avar Age, 23 of which are dated to the Early phase, seven to the Middle phase and twelve to the Late phase. It is important to note that this weapon combination is characteristic only for some regions, such as 16 of the 23 instances during the Early phase having been found in Eastern Transdanubia, while nine of the twelve instances of the Late phase were found on the northern periphery of the Qaganate. The Transdanubian concentration of the Early phase can be explained by either the Merovingian influence apparent in these cemeteries, while the same phenomenon in the Late phase is a peripheral feature mainly related to burials with horses.

The study of the correlation of weapon burials and burials with horses (including horse burials) can offer interesting results. More than quarter of the Avar-age spearheads (171 examples, 25.99 %) were found in burials with horses, and one fifth of them (143 cases, 21.73 %) are from horse burials. This is a relatively high rate of occurrence, showing that half of the known Avar-age spears (47.7 %) were buried next to a horse skeleton. The horse burials and burials with horses show a significant chronological difference, since 86.7 % of horse burials with spearheads are dated to the Early phase, while only the middle course of the Tisza river has similar burials during the Late phase. Burials with horses are predominant during the Late phase, 56.7 % (97 cases) of them dating to the 8th century, while the Early phase also has a high number of occurrences (54 cases, 31.58 %): most of these finds were found in Transdanubia.

Edged weapons are less linked to these burials with horses than that of the polearms. Out of 704 burials with edged weapons only 119 contained a horse (16.9 %) and only three of them are found in horse burials (0.44 %).

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3 Spearheads/year values of each periods: Early Avar period: 4.52 spearhead/year, Middle Avar period: 0.76 spearhead/year, Late Avar period: 1.96 spearhead/year.

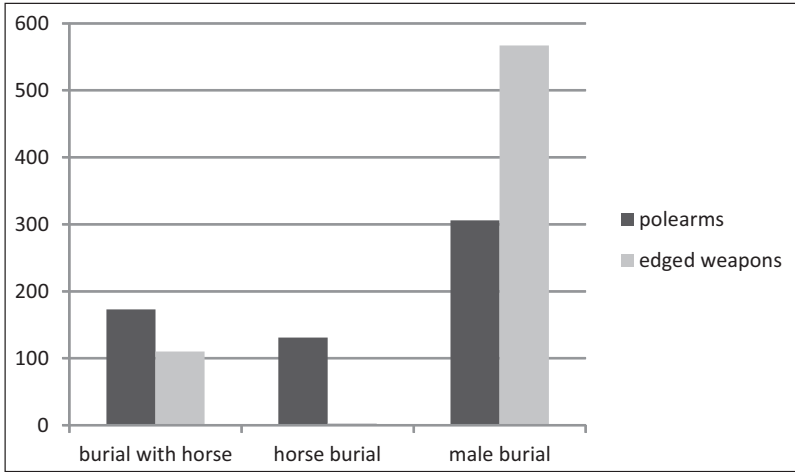


DIAGRAM 14 *Correlation of polearms and edged weapons with burials with horses.*

Most of the burials with horses containing edged weapons are dated to the Late phase and are located on the northern periphery of the Carpathian Basin, while similar burial customs in the Early phase were mainly characteristic for the Great Hungarian Plain.

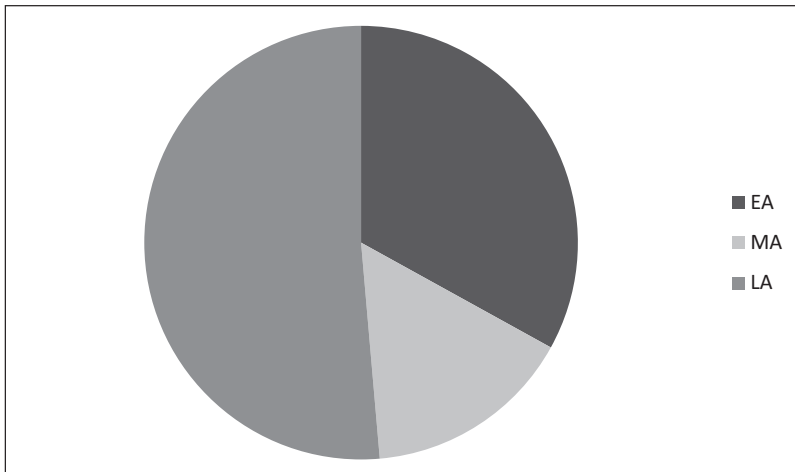


DIAGRAM 15 *The chronological distribution of edged weapons from burials with horse.*

Edged weapons show an interesting correlation with ornamented belt-sets, with 43.89 % of all edged weapons found in graves with belt-sets (309 burials). This rate is relatively high compared to the ratio of burials with edged weapons and horses (16.9 %).

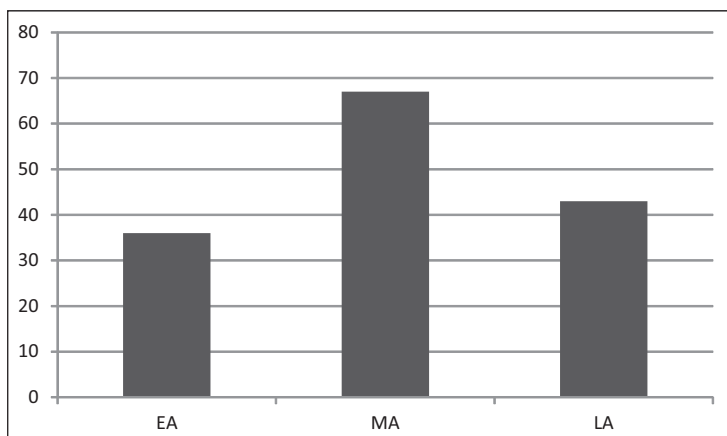


DIAGRAM 16 *Percentage of the burials with edged weapons containing ornamented belts.*

The rate of burials with edged weapons and ornamented belts is not constant during the Avar Age, with this rate being just 36 % during the Early phase, 67 % during the Middle phase, and 43 % during the Late phase, suggesting some kind of growing importance for this combination as shown by the diagram above. The very high rate of Middle phase burials is related to the fact that most such burials can only be dated by the means of these belt-sets.

### 3 The Position of Polearms and Edged Weapons in Burials

#### 3.1 *Polearms*

The characteristic position of polearms and edged weapons in burials will be presented below. Unfortunately, the great number of stray finds among polearms makes the determination of their original position largely impossible, especially as grave robbery and other disturbances of burials can change their original position. Only the position of 156 spearheads could therefore be examined.

The deposition of polearms in graves is closely connected to horse skeletons: spearheads were usually placed next to the head of the horse (32 examples),

while in some cases spearheads were found next to the front legs<sup>4</sup> or the back legs of the animals.<sup>5</sup> Most of the spearheads were found on the right side of the horse skull,<sup>6</sup> their occurrence on the left side being much rarer.<sup>7</sup>

Spearhead at the skull of the horse:

	Site	Grave No.	Right	Left	Reference
1	Aradac–Mečka	A			Nađ 1959, 63, tab. XIII/4
2	Budapest XXI. Csepel–Háros	52	X		Nagy 1998, 160–161
3	Csákberény–Orondpuszta	119			IKM 10.263; Kovrig 1955b, 168
4	Csákberény–Orondpuszta	327	X		
5	Előszállás–Bajcsihegy	20	X		IKM 52.96.5; Kovrig 1955b, 169
6	Gâmbaş	IX			Horedt 1958, 99
7	Gátér	239			Kada 1906, 331
8	Košice–Šebastovce	48			Budinský-Krička – Točík 1991, 14–15, Abb. 3
9	Košice–Šebastovce	67			Budinský-Krička – Točík 1991, 18–19, Abb. 5
10	Košice–Šebastovce	86			Budinský-Krička – Točík 1991, 23–24, Abb. 7
11	Košice–Šebastovce	94	X		Budinský-Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský-Krička – Točík 1991, 25–26, Abb. 8
12	Košice–Šebastovce	226	X		Budinský-Krička – Točík 1991, 48, Abb. 19
13	Košice–Šebastovce	232		X	Budinský-Krička – Točík 1991, 50–51, Abb. 20

4 Košice–Šebastovce grave No. 225 (Budinský-Krička – Točík 1991, 47–48, Abb. 18); Štúrovo–Vojenské cvičisko grave No. 258 (Točík 1968b, 67–68); Tiszafüred–Majoros grave No. 40 (Garam 1995, 13–14, Abb. 4).

5 Budapest XXI. Csepel–Háros grave No. 55 (Nagy 1998, 162–163); Košice–Šebastovce grave No. 131 (Budinský-Krička – Točík 1991, 32–33, Abb. 11); Košice–Šebastovce grave No. 374 (Budinský-Krička – Točík 1991, 72, Abb. 27).

6 15 examples, 48.38 %.

7 Four examples.



(cont.)

	Site	Grave No.	Right	Left	Reference
14	Košice–Šebastovce	254		X	Budinský-Krička – Točík 1991, 55–56, Abb. 22
15	Kölked–Feketekapu A	480	X		Kiss 1996, 129
16	Kölked–Feketekapu B	135	X		Kiss 2001, 67–68
17	Környe	90	X		Salamon – Erdélyi 1971, 22
18	Környe	104			Salamon – Erdélyi 1971, 24
19	Környe	124		X	Salamon – Erdélyi 1971, 26
20	Környe	129	X		Salamon – Erdélyi 1971, 27
21	Nové Zámky I	369			Čilinská 1966, 72–73, Taf. LVII/26
22	Radvaň nad Dunajom–Žitavská Tôň	24/1956			Budinský-Krička 1956, 25–26
23	Szekszárd–Bogyiszlói út	126	X		Rosner 1975–76, I. t. 7; Rosner 1999, 25
24	Szekszárd–Bogyiszlói út	598			Rosner 1999, 76
25	Szekszárd–Bogyiszlói út	754	X		Rosner 1975–76, X. t. 11; Rosner 1999, 96
26	Tiszaderzs–Szentimrei út	32			Kovrig 1975, 222, Fig. 7
27	Tiszafüred–Majoros	183	X		Garam 1995, 28
28	Tiszafüred–Majoros	186	X		Garam 1995, 28–30, Abb. 11
29	Tiszafüred–Majoros	350	X		Garam 1995, 49–50, Abb. 20
30	Tiszafüred–Majoros	395	X		Garam 1995, 54, Abb. 23
31	Tiszafüred–Majoros	809		X	Garam 1995, 99
32	Veszprém–Jutas	121			Rhé – Fettich 1931, 26, IV. 11; Kovrig 1955b, 169

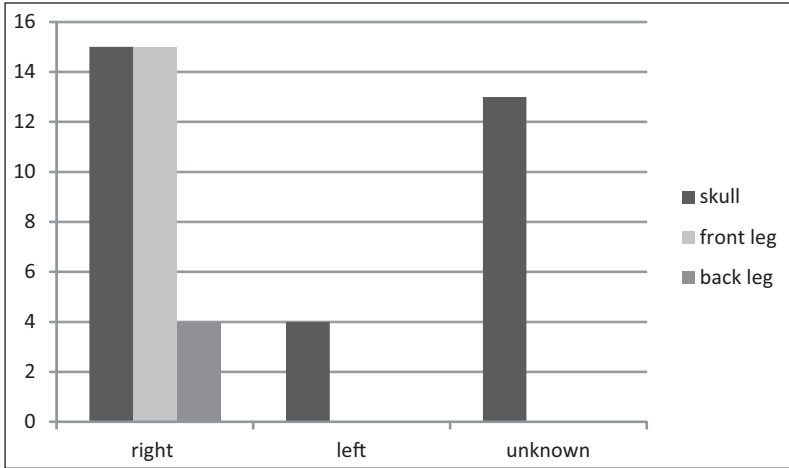


DIAGRAM 17 *Position of polearms deposited in horse burials.*

Spearheads were mainly placed near the feet in male burials,<sup>8</sup> though in some cases these weapons can be found next to the head,<sup>9</sup> humerus,<sup>10</sup> at the thighs<sup>11</sup> at the pelvis<sup>12</sup> or at the hands.<sup>13</sup> Most of the spearheads were found next to the right foot of the deceased,<sup>14</sup> while the position near the left foot is much rarer.<sup>15</sup> The image of the inverted world of hereafter did not show up in the deposition of weapons, since these weapons were also held on the right side during their carrying, though the tip of the spearhead did usually point to the feet.

8 72 cases (62.06 %).

9 16 cases (13.79 %).

10 13 cases (11.2 %).

11 Eight cases (6.89 %).

12 Band grave No. 159 (Kovács 1913, 355); Bóly–Sziebert puszta–A grave No. 59 (Papp 1962, 179–180); Kölked–Feketekapu A grave No. 39 (Kiss 1996, 29); Szekszárd–Bogyiszlói út grave No. 335 (Rosner 1975–76, IV. t. 6; Rosner 1999, 46–47); Szekszárd–Bogyiszlói út grave No. 551 (Rosner 1999, 72): five cases (4.3 %).

13 Tiszafüred–Majoros grave No. 159 (Garam 1995, 26); Tiszafüred–Majoros grave No. 1246 (Garam 1995, 150. Abb. 62): two cases (1.72 %).

14 41 cases.

15 Nine cases.

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
1	Aradac–Mečka	1	X					X	Nađ 1959, 55
2	Band	52	X				X		Kovács 1913, 324–325
3	Band	66		X					Kovács 1913, 329
4	Bóly–Sziebert puszta A	1	X				X		Papp 1962, 168–169
5	Bóly–Sziebert puszta	20			X				Papp 1962, 174–175
6	Bóly–Sziebert puszta	21				X			Papp 1962, 185
7	Budakalász–Dunapart	19	X				X		Erdélyi 1978, 48
8	Budakalász–Dunapart	68	X						unpublished
9	Csákberény–Orondpuszta	44				X			unpublished
10	Csákberény–Orondpuszta	84	X				X		unpublished
11	Csákberény–Orondpuszta	169	X					X	unpublished
12	Gyód–Máriahegy	30			X				Kiss 1977, 30
13	Gyód–Máriahegy	34		X					Kiss 1977, 30
14	Gyód–Máriahegy	38	X				X		Kiss 1977, 40
15	Gyód–Máriahegy	59	X				X		Kiss 1977, 41
16	Gyód–Máriahegy	67	X				X		Kiss 1977, 41
17	Gyönk–Vásártér	129	X				X		Rosner 1971–72, 139
18	Kaposvár–Toponár	14(a)			X				Bárdos 1978a, 18
19	Košice–Šebastovce	80	X						Budinský–Krička – Točík 1991, 21–22, Abb. 6

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
20	Košice– Šebastovce	96		X					Budinský- Krička – Točík 1991, 27, Abb. 9
21	Košice– Šebastovce	292	X				X		Budinský- Krička – Točík 1991, 60–61, Abb. 24
22	Košice– Šebastovce	293	X				X		Budinský- Krička – Točík 1991, 61, Abb. 24
23	Kölked– Feketekapu A	65	X				X		Kiss 1996, 33
24	Kölked– Feketekapu A	211	X				X		Kiss 1996, 64–65
25	Kölked– Feketekapu A	250	X						Kiss 1996, 73
26	Kölked– Feketekapu A	257	X						Kiss 1996, 75
27	Kölked– Feketekapu A	259	X						Kiss 1996, 75–76
28	Kölked– Feketekapu A	260	X						Kiss 1996, 76
29	Kölked– Feketekapu A	275	X						Kiss 1996, 80
30	Kölked– Feketekapu A	289	X						Kiss 1996, 84
31	Kölked– Feketekapu A	324	X						Kiss 1996, 91–92
32	Kölked– Feketekapu A	375	X						Kiss 1996, 103–104
33	Kölked– Feketekapu A	386	X				X		Kiss 1996, 106
34	Kölked– Feketekapu A	392	X				X		Kiss 1996, 108–109
35	Kölked– Feketekapu A	394	X						Kiss 1996, 110
36	Kölked– Feketekapu A	471	X					X	Kiss 1996, 127

(cont.)

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
37	Kölked– Feketekapu A	422		X					Kiss 1996, 116
38	Kölked– Feketekapu A	474			X				Kiss 1996, 127–128
39	Kölked– Feketekapu A	F	X						Kiss 1996, 174
40	Kölked– Feketekapu B	80	X						Kiss 2001, 25–26
41	Kölked– Feketekapu B	82	X						Kiss 2001, 28
42	Kölked– Feketekapu B	443	X				X		Kiss 2001, 141–142
43	Környe	43		X					Salamon – Erdélyi 1971, 17–18
44	Környe	125	X				X		Salamon – Erdélyi 1971, 26
45	Oroszlány I	18	X				X		Sós 1958, 111
46	Pécs–Kertváros	391	X						Heinrich- Tamáska 2005, 148
47	Pécs– Köztemető	4		X					Kiss 1977, 92
48	Pilismarót– Öregek dűlő	1			X				Szabó 1975, 245
49	Pókaszeptk– Mesterföldek	82			X				Sós – Salamon 1995, 64–65
50	Pókaszeptk– Mesterföldek	88		X					Sós – Salamon 1995, 145
51	Pókaszeptk– Mesterföldek	121	X				X		Sós – Salamon 1995, 149
52	Pókaszeptk– Mesterföldek	171			X				Sós – Salamon 1995, 153
53	Pókaszeptk– Mesterföldek	179		X					Sós – Salamon 1995, 154

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
54	Pókaszeptek– Mesterföldek	180	X					X	Sós – Salamon 1995, 64–65
55	Pókaszeptek– Mesterföldek	242		X					Sós – Salamon 1995, 64–65
56	Pókaszeptek– Mesterföldek	332	X					X	Sós – Salamon 1995, 166–167
57	Radvaň nad Dunajom–Virt	99		X					Točík 1992, 47
58	Radvaň nad Dunajom– Žitavská Tůň	10/1956	X						Budinský-Krička 1956, 16–20
59	Radvaň nad Dunajom– Žitavská Tůň	14/1956	X					X	Budinský-Krička 1956, 21–22
60	Szeged– Kundomb	293			X				Salamon – Sebestyén 1995, 37–38
61	Szegvár– Sápadal				X				Bóna 1979, 5
62	Szekszárd– Bogyiszlói út	58	X						Rosner 1999, 17
63	Szekszárd– Bogyiszlói út	350	X						Rosner 1975–76, v. t. 18; Rosner 1999, 48
64	Szekszárd– Bogyiszlói út	354	X				X		Rosner 1999, 49
65	Szekszárd– Bogyiszlói út	478	X					X	Rosner 1999, 65
66	Szekszárd– Bogyiszlói út	556		X					Rosner 1999, 73
67	Szekszárd– Bogyiszlói út	557				X			Rosner 1999, 73
68	Szekszárd– Bogyiszlói út	677	X						Rosner 1999, 85
69	Szekszárd– Bogyiszlói út	730	X						Rosner 1999, 91
70	Terehgy– Márfai dögkút	6	X					X	Kiss 1977, 147–148

(cont.)

Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
71	Tiszaderzs– Szentimrei út	46	X					Kovrig 1975, 222
72	Tiszafüred– Majoros	46	X			X		Garam 1995, 13–16, Abb. 5
73	Tiszafüred– Majoros	113	X			X		Garam 1995, 21. Abb. 8
74	Tiszafüred– Majoros	171	X			X		Garam 1995, 26, Abb. 10
75	Tiszafüred– Majoros	175	X					Garam 1995, Abb. 10
76	Tiszafüred– Majoros	199		X				Garam 1995, 31–32, Abb. 199
77	Tiszafüred– Majoros	272	X			X		Garam 1995, Abb. 16
78	Tiszafüred– Majoros	330	X			X		Garam 1995, 47, Abb. 20
79	Tiszafüred– Majoros	379			X			Garam 1995, 54
80	Tiszafüred– Majoros	423	X			X		Garam 1995, 57, Abb. 24
81	Tiszafüred– Majoros	447	X			X		Garam 1995, 60
82	Tiszafüred– Majoros	451	X					Garam 1995, 60, Abb. 25
83	Tiszafüred– Majoros	452	X					Garam 1995, 60
84	Tiszafüred– Majoros	456	X			X		Garam 1995, 60, Abb. 26
85	Tiszafüred– Majoros	496	X			X		Garam 1995, 65, Abb. 27
86	Tiszafüred– Majoros	507	X			X		Garam 1995, 68, Abb. 28
87	Tiszafüred– Majoros	537	X					Garam 1995, 71–72, Abb. 30
88	Tiszafüred– Majoros	563/a	X			X		Garam 1995, 71

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
89	Tiszafüred– Majoros	577	X				X		Garam 1995, 71–72, Abb. 30
90	Tiszafüred– Majoros	630			X				Garam 1995, 8
91	Tiszafüred– Majoros	638	X						Garam 1995, 82
92	Tiszafüred– Majoros	685	X				X		Garam 1995, 86, Abb. 35
93	Tiszafüred– Majoros	706	X				X		Garam 1995, 90
94	Tiszafüred– Majoros	709				X			Garam 1995, 90
95	Tiszafüred– Majoros	716		X					Garam 1995, 90, Abb. 37
96	Tiszafüred– Majoros	757		X					Garam 1995, 94
97	Tiszafüred– Majoros	783	X				X		Garam 1995, 96., Abb. 38
98	Tiszafüred– Majoros	831				X			Garam 1995, 101
99	Tiszafüred– Majoros	937			X				Garam 1995, 111, Abb. 43
100	Tiszafüred– Majoros	945	X					X	Garam 1995, 112
101	Tiszafüred– Majoros	950	X				X		Garam 1995, 112
102	Tiszafüred– Majoros	994				X			Garam 1995, 117, Abb. 46
103	Tiszafüred– Majoros	1009/a	X				X		Garam 1995, 120., Abb. 48
104	Tiszafüred– Majoros	1069	X				X		Garam 1995, 126
105	Tiszafüred– Majoros	1142	X				X		Garam 1995, 134–135
106	Tiszafüred– Majoros	1149	X				X		Garam 1995, 134–135
107	Tiszafüred– Majoros	1197	X				X		Garam 1995, 142, Abb. 57



(cont.)

	Site	Grave No.	Feet	Skull	Humerus	Thigh	Right	Left	Literature
108	Vác– Kavicsbánya	103				X			Tettamanti 2000, 24–25
109	Vác– Kavicsbánya	189	X				X		Tettamanti 2000, 42–43
110	Várpalota– Unio– Homokbánya	12			X				Bóna 2000b, 129–130

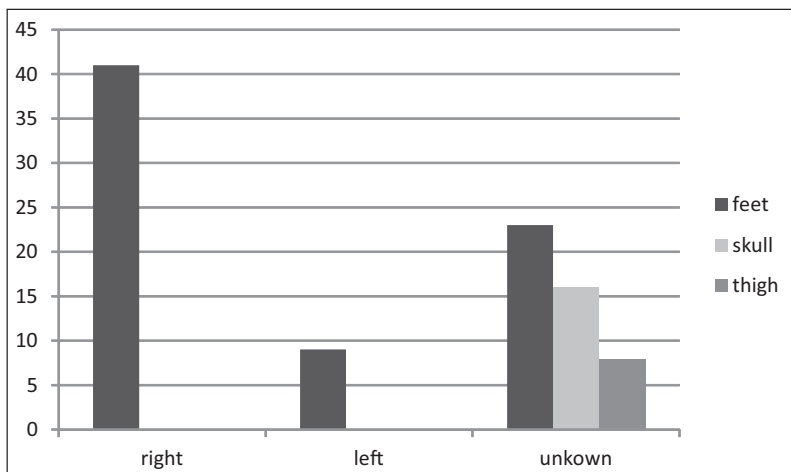


DIAGRAM 18 *The position of polearms in male burials.*

Spearheads were deposited in 73 cases next to the feet of the individual in most of the cases to the right (41 examples) and only in nine cases to the left foot. Polearms deposited near the skull of the deceased are fewer (16 cases), while in 13 cases the spearhead was near the shoulder and in eight cases near the femur of the individual.

### 3.2 *Edged Weapons*

The position of edged weapons were examined in only 157 cases due to the lack of descriptions or grave plans in other cases. Edged weapons were mostly placed on the left arm of the deceased, but in some cases besides the legs. The tip of most of such swords pointed toward the feet, however, the scabbards of

the Late phase were as particular exceptions: they point toward the head. This position is also known in the western Late Merovingian and Early Carolingian burials.

	Site	Grave No.	Right	Left	Arm	Leg	Reference
1	Alattyán-Tulát I	185		X		X	Kovrig 1963, 24
2	Andocs-Újhalastó	21		X			Garam 1973, 134
3	Aradac-Mečka	85		X			Nađ 1959, 62
4	Bačko Petrovo Selo-Čik	28		X	X		Bugarski 2009, 39, 116-117
5	Bágyog-Gyúrhegy	2		X	X		Lovas 1929b, 253; Fettich 1943, 7
6	Biatorbágy-Hosszúrétek (MO PM 016)	35		X		X	Horváth - Reményi - Tóth 2004, 30-31
7	Biharkeresztes-Lencsés-hát		X				Mesterházy 1987, 222
8	Bóly-Sziebert puszta A	20		X	X		Papp 1962, 174-175
9	Budapest III. Óbuda, Szőlő utca			X			Nagy 1998, 45
10	Budapest X. Rákos, Ejtőernyőstorony	1		X	X		Nagy 1998, I. 69
11	Budapest X. Rákos, Ejtőernyőstorony	2	X			X	Nagy 1998, I. 69-70
12	Cicău	3		X			Winkler - Takács - Păiuș 1977, 270-271
13	Čoka-Kremenjak	45		X	X		Kovrig - Korek 1960, 262
14	Csákberény-Orondpuszta	86	X			X	Kiss 1962, 70; Simon 1991, 290
15	Csákberény-Orondpuszta	150		X		X	Kiss 1962, 70; Simon 1991, 290
16	Csengele-Jó-járt	1		X	X		Csallány 1939, 9-11
17	Csolnok-Szedres, Kenderföldek	7		X		X	Erdélyi 1988, 193
18	Csolnok-Szedres, Kenderföldek	13		X	X		Erdélyi 1988, 195, 203

(cont.)

	Site	Grave No.	Right	Left	Arm	Leg	Reference
19	Dunaújváros- Öreghegy	7 (I)		X	X		Hekler 1909, 97–105
20	Gyenesdiás– Algyenes	64		X	X		Müller 1989, 143, Abb. 2
21	Gyód–Máriahegy	67	X				Kiss 1977, 41
22	Gyönk–Vásártér	99		X	X		Rosner 1971–1972, 121–122, II. tábla
23	Gyönk–Vásártér	122		X		X	Rosner 1971–72, 135
24	Győr–Téglavető- dűlő	802		X			Börzsönyi 1908, 218
25	Holiare	K11	X		X		Kovrig 1948, 120–121
26	Jánoshida- Tótkérpuszta	145		X	X		Erdélyi 1958, 28
27	Jánoshida- Tótkérpuszta	210		X			Erdélyi 1958, 36–37
28	Jászapáti– Nagyállás út	84		X	X		Madaras 1994, 33–34
29	Jászapáti– Nagyállás út	264		X	X		Madaras 1994, 71
30	Jászapáti– Nagyállás út	265		X		X	Madaras 1994, 71–72
31	Jászapáti– Nagyállás út	402	X				Madaras 1994, 95
32	Jászapáti– Nagyállás út	410	X			X	Madaras 1994, 96
33	Kaba–belterület			X			Zoltai 1929, 38–39
34	Kecskemét–Sallai út			X	X		H. Tóth 1980, 117–118
35	Kisköre–Halastó	109		X	X		Garam 1979, 24, Abb. 8
36	Kiskőrös–Vágóhíd	V		X		X	László 1955, 26–27. Pl. IV–V
37	Kiskőrös– Városalatt	9		X			Horváth 1935, 36
38	Kiskőrös–városalatt	193		X		X	Horváth 1935, 50

	Site	Grave No.	Right	Left	Arm	Leg	Reference
39	Komárno–8 Shipyard	71		X	X		Trugly 1987, 265
40	Komárno–8 Shipyard	72		X	X		Trugly 1987, 265–266
41	Košice–Barca	4		X			Pátor 1954, 137
42	Košice–Šebastovce	94	X				Budinský-Krička – Točík 1984, 174
43	Kölked– Feketekapu A	29		X	X		Kiss 1996, 27
44	Kölked– Feketekapu A	39	X			X	Kiss 1996, 29
45	Kölked– Feketekapu A	142	X			X	Kiss 1996, 53
46	Kölked– Feketekapu A	211		X		X	Kiss 1996, 64–65
47	Kölked– Feketekapu A	227		X	X		Kiss 1996, 69
48	Kölked– Feketekapu A	253		X	X		Kiss 1996, 74
49	Kölked– Feketekapu A	257		X		X	Kiss 1996, 75
50	Kölked– Feketekapu A	259		X	X		Kiss 1996, 75–76
51	Kölked– Feketekapu A	260	X		X		Kiss 1996, 76
52	Kölked– Feketekapu A	264		X		X	Kiss 1996, 77–78
53	Kölked– Feketekapu A	268		X		X	Kiss 1996, 78–79
54	Kölked– Feketekapu A	324		X	X		Kiss 1996, 91–92
55	Kölked– Feketekapu B	82		X	X		Kiss 2001, 27–28
56	Kölked– Feketekapu B	106		X	X		Kiss 2001, 43–44
57	Kölked– Feketekapu B	132		X	X		Kiss 2001, 65–66
58	Kölked– Feketekapu B	210		X			Kiss 2001, 94–95

(cont.)

	Site	Grave No.	Right	Left	Arm	Leg	Reference
59	Kölked– Feketekapu B	336		X	X		Kiss 2001, 115–117
60	Kölked– Feketekapu B	470		X		X	Kiss 2001, 152–153
61	Környe	8		X		X	Salamon – Erdélyi 1971, 14–15
62	Környe	18		X	X		Salamon – Erdélyi 1971, 15
63	Környe	35		X	X		Salamon – Erdélyi 1971, 17
64	Környe	99		X			Salamon – Erdélyi 1971, 23
65	Környe	100		X	X		Salamon – Erdélyi 1971, 23–24
66	Környe	130		X	X		Salamon – Erdélyi 1971, 27
67	Környe	135		X	X		Salamon – Erdélyi 1971, 27
68	Környe	149		X	X		Salamon – Erdélyi 1971, 29
69	Leobersdorf – Ziegelei Polsterer	35/B		X		X	Daim 1987, 227
70	Leobersdorf – Ziegelei Polsterer	71		X		X	Daim 1987, 241
71	Lukácsháza– Hegyalja dűlő	15	X				unpublished
72	Lukácsháza– Hegyalja dűlő	45	X				unpublished
73	Lukácsháza– Hegyalja dűlő	75	X				unpublished
74	Mór–Akasztódomb	25		X		X	Török 1954, 56–58
75	Mosonszentjános– Kavicsbánya	27	X			X	Fettich 1927, 166–168
76	Mödling–Goldene Stiege	350		X			Schwammenhöfer 1976, 114

	Site	Grave No.	Right	Left	Arm	Leg	Reference
77	Nagyréde– Ragyogópart	9	X		X		Szabó 1968, 40
78	Orosháza–Bónum- téglagyár	51		X	X		Juhász 1995, 24
79	Paks–Gyapa TO33	12		X	X		unpublished
80	Pécs–Köztemető	30		X			Kiss 1977, 94–96
81	Pécs–Köztemető	36	X				Kiss 1977, 96
82	Pécs–Köztemető	38	X				Kiss 1977, 96
83	Pókaszeptk– Mesterföldek	16		X			Sós – Salamon 1995, 137
84	Pókaszeptk– Mesterföldek	332	X				Sós – Salamon 1995, 166–167
85	Pókaszeptk– Mesterföldek	415	X				Sós – Salamon 1995, 182–183
86	Rácalmás–Rózsa major	151	X			X	Visy – Bóna 1972, 54
87	Szeged–Fehértó A	16		X			Madaras 1995, 16, Pl. 2/6
88	Szeged–Fehértó A	26		X	X		Madaras 1995b, 17
89	Szeged–Fehértó A	167		X	X		Madaras 1995b, 32
90	Szeged–Fehértó B	29	X				Madaras 1995b, 140
91	Szeged–Fehértó B	34	X				Madaras 1995b, 141
92	Szeged–Fehértó B	69	X				Madaras 1995b, 144
93	Szeged–Fehértó B	95	X				Madaras 1995b, 146
94	Szeged–Fehértó B	113		X	X		Madaras 1995b, 148
95	Szeged–Kundomb	180		X	X		Salamon – Sebestyén 1995, 28
96	Szegvár–Sápoldal			X	X		Bóna 1979, 5, 8
97	Szekszárd– Bogyiszlói út	16		X	X		Rosner 1999, 13
98	Szekszárd- Bogyiszlói út	44	X			X	Rosner 1999, 16
99	Szekszárd– Bogyiszlói út	216		X	X		Rosner 1999, 34
100	Szekszárd- Bogyiszlói út	350	X			X	Rosner 1999, 49
101	Szekszárd- Bogyiszlói út	356	X		X		Rosner 1999, 51

(cont.)

	Site	Grave No.	Right	Left	Arm	Leg	Reference
102	Szekszárd– Bogyiszlói út	390		X		X	Rosner 1999, 54
103	Szekszárd– Bogyiszlói út	484	X			X	Rosner 1999, 65
104	Szentes–Kaján	33		X			Korek 1943, 6
105	Tárnok			X	X		Garam 1991b, 222
106	Tiszaderzs– Szentimrei út	41		X			Kovrig 1975, 222
107	Tiszaeszlár– Sinkahegy			X			Csallány 1960a, 33
108	Tiszafüred– Majoros	44		X	X		Garam 1995, 13, Abb. 5
109	Tiszafüred– Majoros	114/b		X		X	Garam 1995, 21, Abb. 8
110	Tiszafüred– Majoros	257		X	X		Garam 1995, 37
111	Tiszafüred– Majoros	326	X		X		Garam 1995, 46. Abb. 19
112	Tiszafüred– Majoros	379		X	X		Garam 1995, 52
113	Tiszafüred– Majoros	496		X	X		Garam 1995, 65, Abb. 27
114	Tiszafüred– Majoros	629	X				Garam 1995, 82, Abb. 33
115	Tiszafüred– Majoros	946		X	X		Garam 1995, 112, Abb. 45
116	Tiszaécské–Óbög	1	X				Garam 1991a, 129
117	Üllő II.–Vecsési községhatár	77		X	X		Sós 1955, 199
118	Váchartyán– Gosztanyi szőlőhegy	6		X	X		Ferenczy 1963, 85
119	Vác–Kavicsbánya	301		X		X	Tettamanti 2000, Taf. 16
120	Valálíky– Všechvátých	24	X			X	Pástor 1961, 378–379

	Site	Grave No.	Right	Left	Arm	Leg	Reference
121	Wien XI. Simmering, Csokorgasse	40	X		X		Streinz 1977, 479
122	Wien XI. Simmering, Csokorgasse	112		X			Streinz 1977, 484-485
123	Wien XI. Simmering, Csokorgasse	240	X		X		Streinz 1977, 493
124	Wien XI. Simmering, Csokorgasse	257		X	X		Streinz 1977, 495
125	Wien XI. Simmering, Csokorgasse	348		X	X		Streinz 1977, 503
126	Wien XI. Simmering, Csokorgasse	352	X		X		Streinz 1977, 503
127	Wien XI. Simmering, Csokorgasse	404	X		X		Streinz 1977, 508
128	Wien XI. Simmering, Csokorgasse	426	X			X	Streinz 1977, 510
129	Wien XI. Simmering, Csokorgasse	460	X		X		Streinz 1977, 513
130	Wien XI. Simmering, Csokorgasse	480		X		X	Streinz 1977, 514-515
131	Wien XI. Simmering, Csokorgasse	514	X		X		Streinz 1977, 517
132	Wien XI. Simmering, Csokorgasse	523	X			X	Streinz 1977, 518



(cont.)

	Site	Grave No.	Right	Left	Arm	Leg	Reference
133	Wien XI. Simmering, Csokorgasse	604		X	X		Streinz 1977, 524
134	Wien XXIII. Liesing	16		X	X		Mossler 1975, 83
135	Wien XXIII. Liesing	xxII		X			Mossler 1975, 87
136	Želovce	1	X				Čilinská 1973, 34
137	Želovce	27		X	X		Čilinská 1973, 38
138	Želovce	30		X			Čilinská 1973, 39
139	Želovce	44		X		X	Čilinská 1973, 42
140	Želovce	78		X	X		Čilinská 1973, 49
141	Želovce	79	X				Čilinská 1973, 49
142	Želovce	124	X		X		Čilinská 1973, 57
143	Želovce	167		X			Čilinská 1973, 65
144	Želovce	170		X	X		Čilinská 1973, 66
145	Želovce	175		X	X		Čilinská 1973, 67
146	Želovce	311	X			X	Čilinská 1973, 91
147	Želovce	312		X		X	Čilinská 1973, 91–92
148	Želovce	335	X				Čilinská 1973, 97
149	Želovce	371	X				Čilinská 1973, 102–103
150	Želovce	490	X				Čilinská 1973, 124
151	Želovce	564	X			X	Čilinská 1973, 135
152	Želovce	818		X			Čilinská 1973, 180
153	Želovce	820	X				Čilinská 1973, 180
154	Želovce	843	X				Čilinská 1973, 183
155	Zillingtal	D-418	X			X	Daim 1998, 101–102
156	Zillingtal	D-451	X			X	Daim 1998, 102
157	Zillingtal	D-469	X			X	Daim 1998, 103

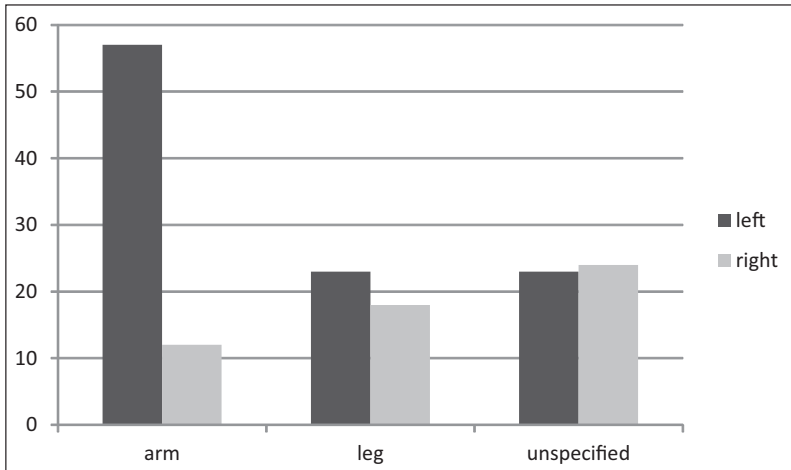


DIAGRAM 19 *Positions of edged weapons in male burials.*

One hundred and three edged weapons were deposited in the left side of the skeleton (65.61 %), while only 54 examples were to the right of the individual (34.39 %). The left side was dominant according to our data.

Most of the swords on the left side were deposited next to the left arm (57 examples, 36.31 %). These swords were unslung from the belt and placed in the burial with their scabbard. This mode of deposition was used from the beginning of the Early phase until the end of the Late phase, and it was characteristic for every type of edged weapon. These edged weapons were mostly placed between the elbow and the knee, while in some cases its hilt was found next to the left shoulder. Some edged weapons were deposited near the left legs between the hip and the ankle (23 burials, 14.65 %), while in 23 burials (14.65 %) such weapons were found at the left side of the body without any further specification.

Edged weapons deposited on the right side of the body are much fewer in number, only 54 such burials are known, in 12 cases these artefacts were found along the right arm, in 18 cases along the right leg, while in 24 cases the exact location of the edged weapon is unknown. The right side is frequent for seaxes, which is the usual side for wearing these weapons.

The symbolic significance of the left or right side of the human body has already been discussed in Avar archaeology. Some researchers have suggested that since the normal position of wearing the edged weapon is on the left side, swords and sabres on the right side of the deceased might be regarded as evidence of the invocation of the inverted hereafter. This interpretation has been

rejected by István Bóna, who instead suggested that people with swords on their right side were simply left-handed, and that is the explanation for the great majority of the edged weapons placed on the left side.<sup>16</sup>

Most of the edged weapons were found unbuckled from the belt and not in their original wearing position, and therefore their positions in the burial cannot tell us anything about the left- or right-handedness of the deceased nor its relationship to beliefs about the inverse hereafter. However, in some cemeteries, such as that at Želovce, edged weapons were frequently placed on the right side of the deceased.

The seaxes play a special role in the study of depositional rules, since these artefacts were usually worn on the right side. Only 24 % of all seaxes can be examined in this respect. Long seaxes were usually placed to the left side of the body but with the tip towards the head.<sup>17</sup> The position of these weapons is similar to that of western depositional practices.<sup>18</sup> Another characteristic position of these seaxes is along the right leg,<sup>19</sup> a similar feature having been observed in some Early Carolingian cemeteries of Austria.<sup>20</sup> Differences between those western customs and the Avar rites were observed only in the case of burials with horses.

#### 4 Weapons and Age Groups of the Deceased

The examination of weapon depositions by age at death of the deceased is a relatively new field of research. In Avar archaeology László Simon was the first to use this perspective, his starting point being the sword from Nagykőrös with gold coverings which suggested that the small size of the artefact could be interpreted as an attribute of a child's sword. He listed the children's graves with weapons from the Avar Age, and concluded that the edged weapons from children's graves<sup>21</sup> are no shorter than the average sword length. He drew

16 István Bóna (1979, 28) ten graves with edged weapons on the left side of the deceased.

17 Bernolákovo–Sakoň grave No. 53 (Kraskovská 1962, 436–437); Zalakomár grave No. 144 (Szőke 1982–83, 70–72; Szőke 2000, 494, Taf. 12).

18 Similar observations were made by Ursula Koch (1977, 105).

19 Wien xxiii Zwölfaxing 1. grave No. 3 (Lippert 1966, 116–117); Münchendorf grave No. 38 (Mitscha-Märheim 1941, 32, Taf. 17/10).

20 Gusen (Tovornik 1985, 199), Auhof bei Perg (Tovornik 1986, 419).

21 Želovce grave No. 490 (Čilinská 1973, 124, Taf. LXXXIII/17); Bóly grave No. 20 (Papp 1962, 174–175, xxviii. t. 3).

attention to the characteristic weapon finds (arrowheads and lamellar armour) from children's graves.<sup>22</sup>

The tradition of early medieval archaeology in Germany has also focussed on children's graves with weapons, and Irmgard Ottinger has interpreted these weapons partly as status symbols and partly as toys or practising weapons.<sup>23</sup> Other approaches to these weapons, such as interpreting them as having apotropaic significance, have been suggested by Hanni Schwab.<sup>24</sup>

The relationship between weapon deposition and age group of the deceased was considered by Heinrich Härke in the study of Anglo-Saxon weapon burials. His work was based on a large sample of anthropological data (893 cases). His main conclusion was that most of the weapons were placed with adult burials but an ability in using such weapons played no role in their deposition, as shown by the children and senile individuals with weapons. He observed the increasing number of weapons relative to increasing age and presented some weapon types characteristic of a specific age. He established some age limits in weapon deposits: from 12 years of age onwards the number of weapons rose in burials, from 20 years onwards seaxes and axes were also deposited. According to the observations of Härke in Anglo-Saxon England weapons were deposited in high-status children's graves and only a tiny proportion can be regarded as toys or practising weapons.<sup>25</sup> The relationship between costume and age group has also been addressed recently by Sebastian Brather.<sup>26</sup>

The two main questions concerning the age groups of Avar weaponry is: first, whether there was an age limit at all, and second the age limits of certain weapon types. For addressing these questions anthropological data is needed for comparative analysis which limits their study to those cemeteries examined by physical anthropologists (mainly for age). The main problem is the interdisciplinary nature of the topic, with age being studied by biological features which in some cases does not correspond to the social age of the individual.<sup>27</sup> The age determinations of anthropologists can refer to various periods and are of varying precision, and therefore I will use the data on the basis of these age groups: infants, juveniles, adults, mature and senile individuals.

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22 Simon 1983, 45–69.

23 Ottinger 1974, 405–407.

24 Schwab 1982, 260.

25 Härke 1992, 192–195.

26 Brather 2004b, 1–58; Brather 2008, 283–291.

27 Social age is the socially important life-phase, like adult manhood or the bridehood for women (Brather 2004b, 2).

In this study, only 125 instances of age-related data were available from burials containing edged weapons and/or polearms, with half of them (65 cases) being from Slovakia, and therefore significant distortions must be noted as a consequence of the various regional research traditions.

In 78 cases age determinations of the deceased from burials with edged weapons were available, with 23 dated to the Early phase, 26 to the Middle phase and 29 to the Late phase, their chronological distribution being largely even. Five of the edged weapons were found in infant graves, four were in juvenile, 21 in adult, 41 in mature and seven in senile burials. Thus, edged weapons were mainly found in graves of adult and mature individuals.

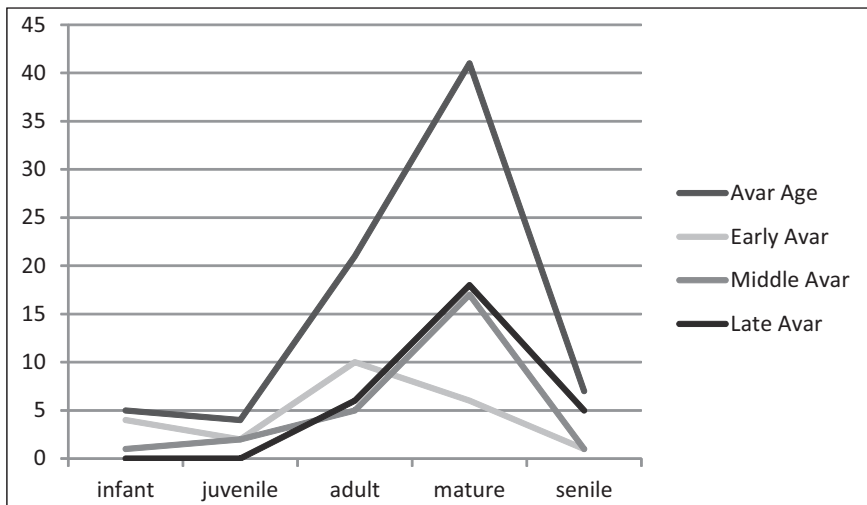


DIAGRAM 20 *Distribution of edged weapons according to the age of the deceased in the Avar Age.*

Similar results are presented in the diagram studying age groups within shorter periods, wherein the Early phase there is four infant, two juvenile, ten adult, six mature and one senile individuals buried with edged weapons, while the increasing importance of the mature age group can be observed during the Middle phase, as the deposition of edged weapons shifted towards older age groups during the Late phase as well, with most of the senile burials (seven cases) known from this period.

The great number of infant and juvenile burials with edged weapons is a result of the short seaxes (*'Kurzsaxe'*) of Környe cemetery which was a characteristic secondary weapon mainly used by adolescent and young people, while *spathae* were placed only in adult graves.

Much less information is available for spearheads, with only 59 burials with sufficient anthropological data, with 23 of them dating to the Early phase, two graves being known from the Middle phase and 34 from the Late phase. The low number of Early Avar burials is a consequence of the deposition of spearheads mainly with horse burials, whilst in the Middle phase the small number of spearheads limits viable examination, resulting in only the quantity of available data for the Late phase being regarded as sufficient.

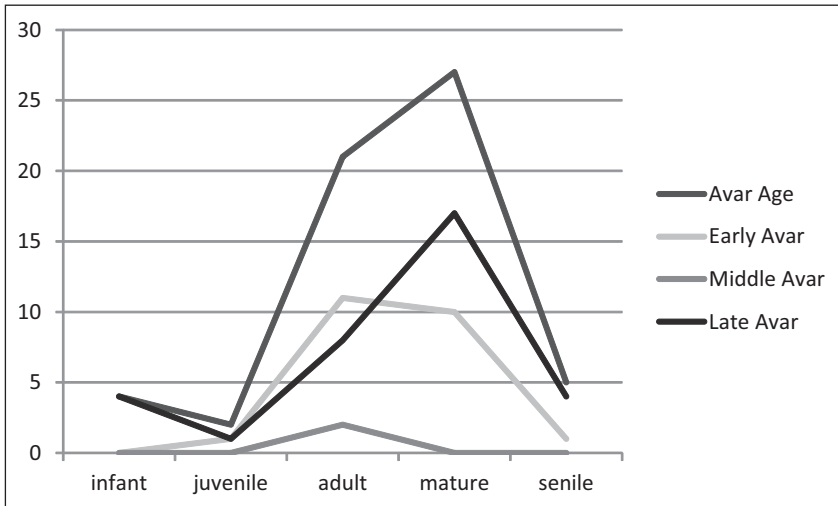


DIAGRAM 21 *Distribution of polearms according to the age of deceased in the Avar Age.*

The diagram shows a similar result in the case of edged weapons, with most of the spearheads having been deposited in adult burials during the Early phase (between 20–40 years of age), while the Late phase is characterised by twice as many spearheads having been deposited in mature (40–60 years of age) burials as in adult ones. More infant burials are known with spearheads as adolescent burials (between 14 and 23 years of age), which is an interesting phenomenon that probably demonstrates the high status of the children buried with such weapons.

This phenomenon is even more striking if we consider that youths between 14 or 23 years old would have been physically suitable for fighting, while the rate of men over 40 years old is very high for both kinds of weapon. Even in senile burials (over 60 years old) more close combat weapons were found than in juvenile graves. As a result the deposition of weapons in burials was much more closely associated with social maturity than with fighting ability.

However, all the above results must be treated with caution due to the low number of anthropological data, and therefore two anthropologically well studied cemeteries containing large numbers of graves will also be examined as a control study: Košice–Šebastovce and Komárno Shipyard.

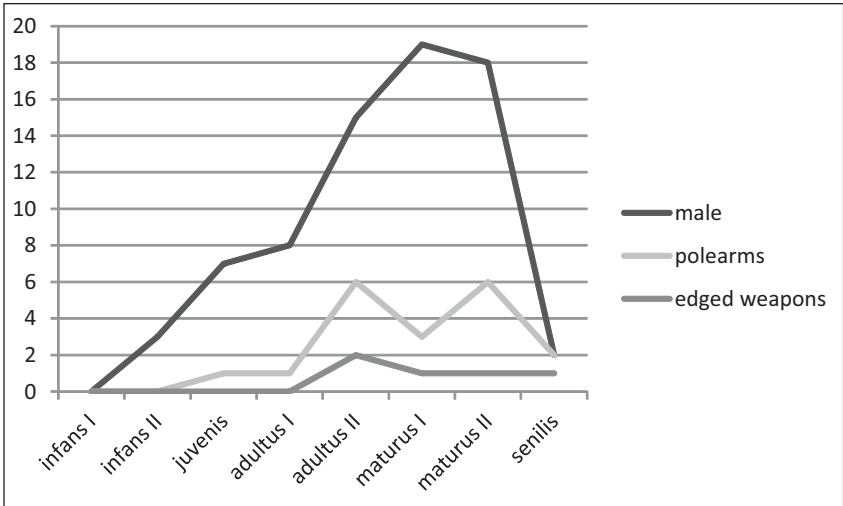


DIAGRAM 22 *Distribution of close combat weapons in Košice–Šebastovce cemetery according to the age of the deceased.*

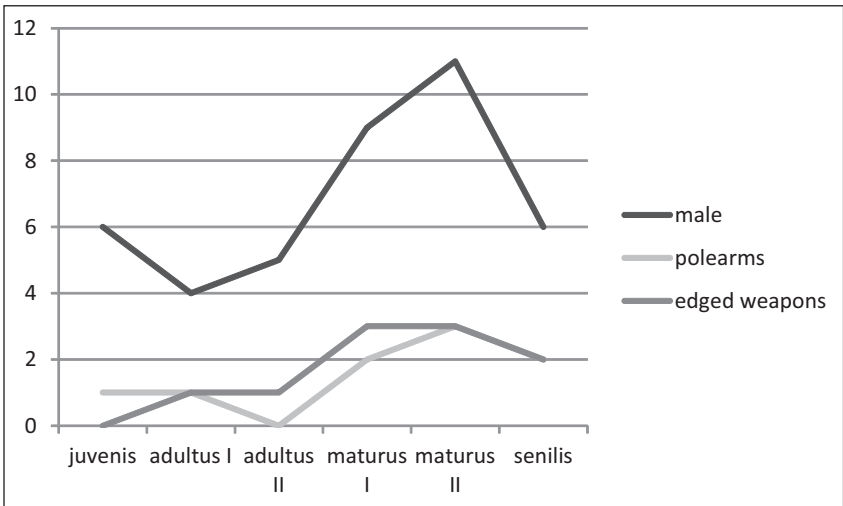


DIAGRAM 23 *Distribution of close combat weapons in Komárno–Shipyard cemetery according to the age of the deceased.*

The demographic analysis of both cemeteries attests that most men died in to the mature age group, between the age of 50 and 60 (not counting the great number of deceased infants), and therefore these numbers demonstrate that the number of weapons follows the line of mortality. The only exception to this rule is the senile age groups which show an abrupt rise both in Košice–Šebastovce and Komárno–Shipyard.

The percentage of burials with close combat weapons in the various age groups in Košice–Šebastovce are as follows:

Age groups	Polearm	Edged weapon
juvenis	14.28%	0%
adultus	29.16%	8.30%
maturus	25.58%	4.65%
senilis	100%	50%

The percentage of burials with close combat weapons associated with various age groups in Komárno–Shipyard:

	Polearm	Edged weapon
juvenis	16.66%	0%
adultus	11.11%	22.22%
maturus	21.74%	26.10%
senilis	33.33%	33.33%

This result is even more striking if we examine the percentage of weapon deposition patterns associated with the age groups shown in the two diagrams. Some instances can distort the picture considerably, such as in the case of Komárno–Shipyard, where a juvenile boy was buried with a spear resulting in a very high percentage. Besides such distortions, the diagrams show a rising percentage of weapon deposition among mature and senile individuals, the most significant of which being the high rate of senile individuals. A 15 % increase is observed in the percentage of burials with spearheads between the juvenile and adult age groups at Košice–Šebastovce.



The rate of burials with polearms and edged weapons presents a similar dynamic, though the number of swords is much less than that of the polearms. Polearms could be buried in the graves of juvenile individuals, while swords appear only in adult graves. The frequent occurrence of weapons in senile burials, as well as in horse offering, could be the sign of respect of aged persons. The examination of Anglo-Saxon weapon burials by Heinrich Härke showed similar results, though in Anglo-Saxon cemeteries most of the weapons were buried in adult male burials, though senile male individuals got weapons as a higher percentage.<sup>28</sup>

All the above contradicts the suggestion of the social maturity of 14–15 years old being assigned by the acquisition of a belt.<sup>29</sup> Social maturity probably had various levels, and the burial rites at the very least suggest a more complicated phenomenon.

In light of the age determinations of relevant anthropological examinations, we are not in a position to discuss so-called warrior graves, since the militarily most active age group appears very poorly represented amongst these weapon burials, with most of the weapons having been deposited with aged or even old men. The act of weapon deposition probably had social reasons with weapons in burials not necessarily representing social status but also age groups which were closely interrelated with each-other. The study of burials with horses from the same perspective has resulted in a similar conclusion, with horses being deposited mostly with senile individuals. The same is true for female burials with horses.<sup>30</sup>

Of course, it need not have only been the age of the deceased that was the only basis for such depositional decisions, in respect of who got weapons in their grave and who did not, and nor does it explain the social significance of these weapons in the burial, though it can highlight some important features. Nothing is known about the inheritance of weapons among the Avars, and even the weapons in these burials could have been the property of someone else.

Several other factors could also have influenced the deposition of weapons in burials besides the age of the deceased, like their economic and social position, the customs of the burying community and the prestige of the deceased amongst that community. The individual fate of the deceased could also have affected the funeral in respect of communal rules.

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28 Härke 1992, 183.

29 Unfortunately no extensive analysis was made on the relationship between age and the inclusion of belt-costumes buried in a grave in respect of this anthropological data.

30 Čilinská 1990, 135–146.

## 5 Conclusions

The definition of the so-called 'armed stratum' in the social hierarchy was one of the main questions of Avar archaeology from its very beginning.<sup>31</sup> The social analysis of weapon combinations and their identification with social groups has been widespread in Merovingian archaeology,<sup>32</sup> where several factors (the great number of burials in cemeteries, the considerable number of well published cemetery excavations, the availability of anthropological data, highly developed relative chronology, written sources [*'Volksrechte'* = Merovingian legal sources], and complex social models) have facilitated this approach. However, in light of a number of overviews of Merovingian social archaeology a more sceptical approach can be observed with respects to the possibility for reconstructing these ancient social systems.<sup>33</sup> A new approach for social reconstruction in Merovingian archaeology has instead focussed on the identification of a nobility which is attested from 8th-9th century written sources, whereas unfortunately searching for the roots of nobility can be regarded as somewhat anachronistic for the 6th-7th century, when this social category did not apparently exist.<sup>34</sup>

Unfortunately, Avar social history is so poorly understood that we do not even have such data for later social structures. All such knowledge of the Avars is limited to the social systems of contemporary and later steppe nomadic societies, used as the basis of analogy, and some limited social titles attested by written sources, but with little understanding of their meaning and function.<sup>35</sup> Even if social categories can be distinguished on the basis of burial assemblages, these categories cannot be compared or identified with historically documented social groups.

These archaeological sources present other problems, for whilst the analysis of burials can offer abundant information on burial rites and depositional rules they offer little in respect of broader understandings of the armament of the deceased, for we cannot even reconstruct fully functional weapon

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31 See Szentpéteri 1993; Szentpéteri 1994.

32 Werner 1968.

33 Steuer 1982; Steuer 1987; Härke 1992; Härke 1997.

34 The change in methodology is also indicated by the choice of titles, for while Frauke Stein (1967) still used the term noblemen's graves (*'Adelsgräber'*) for the 8th century, Anke Burzler (2000) already used the process of a formation of a nobility (*'Nobilifizierungsprozess'*) for the same period.

35 For the society of the Avar Qaganate, see: Pohl 2002, 163–188, 292–308). However, Pohl had to use analogies from later Nomadic societies because of a lack of sources.

combinations based on these burials when taking into account the symbolic nature of the weapon burial rite. Besides methodological problems, Avar cemeteries are particularly problematic in terms of their degree of publication, since very few cemeteries have been analysed in terms of horizontal stratigraphy, and related anthropological data is also mostly lacking. Only after the detailed study of all of these factors can any truly reliable interpretations or conclusions be drawn regarding the probability of weapon burial rites involving male individuals or their social significance, as well as their relationship to other artefacts types, such as ornamented belts. The age, body shape and injuries of the deceased should be considered together with the buried weapons. According to current knowledge, these weapon depositions, like other elements of the burial rite, are characteristic only of a special, rather small region, and every community buried their members according to their own particular customs, and therefore no generally accepted social model can be constructed.

The two weapon types studied in this volume (polearms and edged weapons) represent only a small part of Avar armament and were rare grave goods. Polearms most likely did not have great social significance judging by their distribution and the mode of their deposition in burials; however, some exceptions can be mentioned. Openwork spearheads have a non-functional attribute, which might refer to some important symbolic meaning. A similar social significance can be attributed to spearheads that are rarely deposited in graves, like the hooked spearhead of Devínska Nová Ves, the size and uniqueness of which gave it a special significance.<sup>36</sup>

Edged weapons may have had greater social significance, especially as ostentatious weapons covered with gold or silver can be identified, though they represent only a small number of Avar-age edged weapons. Their rarity and the high value of the raw material suggest a relationship to prestige, which was further enhanced by the applied jeweller's techniques. The ring-pommel swords covered by gold or silver (E.I.C/2.b, E.II.B/2.b) could have been very precious at the time of their deposition, however, regardless of their high value determining the social position of the deceased on the basis of these weapons is problematic, since it was the burying community itself that decided what could be buried in the grave and what should be omitted.

The concentration of swords covered with gold foil in the Danube-Tisza interfluvium is of particular significance, since the swords covered with silver or copper alloy plates surround their distribution area (Map 55). This kind of distribution probably refers to a central place of power.

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36 Bratislava–Devínska Nová Ves grave No. 524 (Eisner 1952, 119–120, Obr. 71/1).

## Armament and Cavalry Warfare in the Avar-age Carpathian Basin

The appearance of the Avars signalled a new era in the military history of the Carpathian Basin. At the eve of the Avar conquest the Germanic people of the Carpathian Basin, the Lombards and Gepids, pursued a rather symbolic warfare: Alboin the Lombard king called on the enemy Gepid prince Thurismod for a duel.<sup>1</sup> No similar event is mentioned in the written sources on the Avars, whereas the Avar army is frequently mentioned by Byzantine sources describing ceaseless combat in the Balkans until the siege of Constantinople in 626, during which the Avars often besieged fortified towns like Sirmium, Singidunum, Corinth and Thessaloniki.<sup>2</sup> The strategic position of the Carpathian Basin changed which led to a fundamental transformation in Byzantine politics and diplomacy towards the northern Barbarians.<sup>3</sup>

According to contemporary descriptions, the Avar army was not homogeneous, neither ethnically or in respect of its fighting units, with Avars Kutrigurs,<sup>4</sup> Gepids<sup>5</sup> and Slavs<sup>6</sup> being among them, and as well as the cavalry, there was also infantry, fleet<sup>7</sup> and even artillery all playing a significant role.<sup>8</sup> Avar warfare

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1 Bóna 1974, 11; Pohl 2002, 56.

2 The Avar – Byzantine wars are described by Bóna (1984a, 313–316) and Pohl (2002, 70–88, 128–159, 242–256).

3 After the death of Justinian (565) significant changes occurred in Byzantine foreign affairs caused by the dramatic financial crisis of the Empire and probably by the personal ambitions of Justin II (Pohl 2002, 48–49).

4 The name of the Kutrigurs was last mentioned in a campaign in Dalmatia dated to 567 with the participation of 10,000 warriors (Pohl 2002, 60).

5 In a battle near the Tisza river in 599 Byzantine troops captured many Gepids and Slavs (Pohl 2002, 216). Gepidic and Slavic troops were also participating in the siege of Constantinople in 626 (Pohl 2002, 248).

6 Avars and Slavs were mentioned together during the Balkan campaigns but written sources were not able to distinguish them from one another (Bóna 1984a, 318). Slavic troops were attacking the sea-walls of Constantinople from the Golden Horn with their boats (Pohl 2002, 253).

7 For the Avar fleet on the Danube and building of a ship-bridge, see Bóna (1984a, 313) and Pohl (2002, 70–71).

8 Torsion artillery was first used by the Avar army during the siege of Appiareia in 586, where a Byzantine war-prisoner called Bousas told the Avars how to make catapults called

should not, therefore, be reduced to 'Nomadic warfare', since several non-nomadic elements within the Avar army are also known as they confronted one of the biggest and most diverse armies of the contemporaneous world, the Byzantine army.

Significant technological innovations appeared together alongside the Avars during the 6th century, with the Avar transmission of the stirrup to Europe being more than probable, and therefore making the Avar army one of the most up to date at the turn of the 6th–7th century. Although the stirrup was already widely known in 4th century China and the Far East,<sup>9</sup> the earliest stirrups in Europe were found in Avar graves,<sup>10</sup> while these artefacts only appeared during the 7th century in the Merovingian world.<sup>11</sup> The appearance of the stirrup in Byzantium was contemporary with the Avars as attested by the Strategy of Maurice from the end of the 6th century.<sup>12</sup> The stirrup both facilitated the mounting of the horse<sup>13</sup> and offered stability during its riding. Several interpretations of the known effect of the stirrup on medieval warfare and society have been suggested,<sup>14</sup> however, it is important to note that the stirrup was not crucial for either horseback archery<sup>15</sup> or for heavy cavalry<sup>16</sup> since both fighting

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Helepolis (Kardaras 2005, 60). These kind of siege-engines were later used during the siege of Thessaloniki (586 or 597) (Lemerle 1979, 151; Vryonis 1981, 384).

- 9 The first representations of stirrups are known from the 2nd century BC in India (Littauer 1981, 100, fig. 21), however, the hook represented is merely an early predecessor of the later stirrup. The first real stirrups are known from 4th century China from both representations and archaeological finds (Bivar 1955, 61–65; Littauer 1981, 102; Dien 1986, 33–34). It is important to note that the stirrup is not a Chinese invention, the earliest examples having been found in the Nomadic burials of Xianbei (Dien 1986, 33).
- 10 For early Avar stirrups: Kovrig 1955a; Kovrig 1955b.
- 11 For early Merovingian stirrups: Nawroth 2001.
- 12 The stirrups are mentioned as 'σκαλα' with the original meaning of 'stairs' (Maurikios XI/2, in Dennis – Gammilscheg 1981, 81). Maurice proscribes an Avar origin for several innovations in the Byzantine cavalry but not for the stirrup (von Freeden 1991, 624; Bálint 1993).
- 13 The first representation of a stirrup in China is known from a Jin burial from the year 302, though it was only a left stirrup facilitating the mounting of the horse, while the first stirrups used in pairs for riding is known from 322 (Dien 1986, 33).
- 14 The theory of Lynn White (1962, 1–38) is the best known, according to which the stirrup resulted in the formation of the heavy cavalry and of feudalism. However, this theory cannot be accepted for chronological reasons, since stirrups appeared in Western Europe much earlier than the supposed 8th century (Curta 2008, 302–310).
- 15 According to current knowledge based on archaeological finds and representations the Scythians, Parthians, Huns and even the Sassanian did not use stirrups.
- 16 Heavy cavalry is well known long before the European appearance of stirrups among the Sarmatians in the Middle East (Parthians and Sassanians), including even the Roman army (Cataphracts and Clibanarii), who did not use stirrups.

methods were used long before the European appearance of the stirrup. Here stability was secured by the use of a high saddle bow or horned saddle, before the stirrup is attested by Roman and Sassanian saddles.<sup>17</sup> However, the introduction of the stirrup could enhance the effectiveness of these fighting methods, for as well as improved stability and comfort, this innovation did not so restrict the movements of the mounted warrior.<sup>18</sup>

Recently, the possibility of the Byzantine transmission of the stirrup to Europe has emerged, based on the observation that the description of Pseudo-Maurice did not mention the stirrup among the many innovations borrowed by the Byzantine cavalry from the Avars.<sup>19</sup> The typological differences between the stirrups of the Carpathian Basin and the Merovingian world was emphasised by Mechtild Schulze-Dörlamm, though she linked the European appearance of this artefact to the Avars,<sup>20</sup> whereas the spread of the stirrup was partly due to Byzantine transmission.<sup>21</sup>

If Byzantium did not copy the use of the stirrup from the Avars, the only way to have acquired it would have been via the Middle East. The Silk Road played a significant role in the transmission of technical innovation, though its last section passed through Sassanian Iran. However, the only trace there for the use of stirrup is the representation of a horse from the rock relief of Taq-i Bustan, from the reign of Khusraw II (591–628).<sup>22</sup> The only stirrup known from the Sassanians is a silver example from the art trade, without further any further information as to its origins.<sup>23</sup> All of these are chronologically contemporaneous with the Avar finds.

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17 This saddle type (*'Hörnchensattel'*) is known both from Iran (Ghirshman 1973, 94–107) and the Roman Empire (Junkelmann 1992, 36, 71).

18 According to the most recent interpretation on the effect of stirrup on warfare this artefact permitted a change of weapons (bow and spear) during battle (Curta 2008, 314).

19 Maurice I. 2. in Dennis – Gammilscheg 1981, 81. Maurice did not mention the Avar origin of the stirrup (von Freeden 1991, 624; Nawroth 2001, 129). For Avar influences on the Byzantine army, see: Darkó 1934, 3–40; Darkó 1935, 443–469; Darkó 1937, 119–147; Szádeczky-Kardoss 1983, 317–326; Szádeczky-Kardoss 1986, 203–214).

20 Schulze-Dörlamm 2006, 490–492.

21 The more recent study on the early European stirrups did not conclude on their Avar or Byzantine origin but emphasised the existence of very early Byzantine examples (Curta 2008, 315–318).

22 The representation of the Khusraw on horseback is unfortunately not intact but on the scene on fallow-deer hunting his foot is horizontal suggesting the use of the stirrup (Overlaet 1993, 93).

23 From the site Cheragh 'Ali Tepe (Daylaman province) (Böhner – Ellmers – Weidemann 1972, 40; Werner 1974, 115. Abb. 5/6; Werner 1984b, 150. Abb. 158; Overlaet 1993, 93, 187).

The distinction between heavy and light cavalry is not unambiguous, since it is based on their function (defensive or offensive) and not on the weight of the armour.<sup>24</sup> However, no such definition can be used in archaeology, and therefore the heavy cavalry will be distinguished by its heavy armour (mainly the armour of the horse) from the light cavalry. According to the known data the heavy cavalry played an important role in the Avar army,<sup>25</sup> judging by the large number of lamellar armour finds from burials of the Early phase.<sup>26</sup> Unfortunately their interpretation is problematic, as most of them are not represented by the complete body armour but rather just a small fragment (a few lamellae or a row), placed in the burial as an amulet,<sup>27</sup> but these artefacts at least attest to their existence and use. No archaeological traces of horse armoury are known, however, the Strategy of Maurice suggested that the Byzantine cavalry use an Avar type horse armour covering only the head and breast of the horse and not the Sassanian type armour which covered the whole body of the horse.<sup>28</sup>

The concept of an Early Avar heavy cavalry is based on the studies of Dezső Csallány, using the remains of Avar armour,<sup>29</sup> and the first military historical theory was developed by Joachim Werner<sup>30</sup> and István Bóna.<sup>31</sup> Joachim Werner cited the representation of a Byzantine mounted warrior on the silver plate from the Isola Rizza hoard near Verona, and emphasised the contacts between

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24 For the distinction of light and heavy cavalry: Négyesi 2000, 375–378.

25 For Avar-age heavy cavalry: Nagy 2005, 135–148.

26 For Avar-age lamellar armour: Csallány 1972, 7–44; Bóna 1980, 42–46. For its Eurasian parallels: Thordeman 1933, 117–150; Thordeman 1934, 294–296; Thordeman 1939. Lamellar armour in its European context: Kory 2004, 375–403. Lamellar armour from Late Antique forts: Bugarski 2005.

27 Very little complete body-armour is known from the Avar Age: one of the most important is from Kunszentmárton (Csallány 1982, 3–35), Tiszavasvári–Koldusdomb (Csallány 1960a, 51–84), Hajdúdorog (Csallány 1960b, 17–23), Budakalász (Pásztor 1995, 58–78) and Kölked–Feketekapu B grave No. 80 (Kiss 2001, 25–26, Taf. 24–27). These graves belong to high-status individuals judging by the other grave goods. Most of the lamellar armour fragments can be interpreted as amulettes (Kory 2004, 394).

28 Maurice 1.2. in: Dennis – Gammilscheg 1981, 78–83. The only representation of the Avar type horse-armour is known from the Sassanian rock-relief of Taq-i Bostan (Thordemann 1934, 294–296).

29 For Avar-age lamellar armour and its reconstruction: Csallány 1960a, 51–84; Csallány 1960b, 17–23; Csallány 1972, 7–44; Csallány 1982, 3–35.

30 Werner 1974, 110–111.

31 Bóna 1980, 47–48; Bóna 1984a, 321.



Avar, Byzantine and Western European heavy cavalry,<sup>32</sup> while István Bóna studied its eastern contacts based on the burial at Szegvár-Sápoldal. Bóna identified the spearhead from the burial as a thrusting weapon ('*Stosslanze*'), which had a significant role from the Sarmatian period onwards. According to his view this polearm was of eastern origin and its distribution could be traced back to the northern borders of China.<sup>33</sup>

Based on the classification of Avar-age spearheads, the P.I and P.II form groups can be identified as thrusting weapons, since the reed-shaped and conical blades are only suitable for frontal attacks. All previous interpretations concerning their function as javelins (throwing weapons) cannot be accepted.<sup>34</sup> Their function as a lance ('*Stosslanze*', '*Spiess*', '*pike*') can be inferred based on their conical broad socket, broad neck, and rhombic cross section of the blade, all of which help determine that the weapon was resistant against frontal effects hindering its breakage.

Reed-shaped spearheads (P.I) are often found in horse burials or burials with horses to the right of the horse skull, and the Avars probably held it to be part of the equipment of the horse, the composition of the so-called sacrificial finds (stirrup, horse bit and spear) suggest this to have been the case. Uta von Freeden even suggested that these spears were held in a long cylindrical socket fixed to the saddle,<sup>35</sup> and therefore these weapons can be regarded as a typical mounted weapon.

Unfortunately no reliable representations of these polearms are known from the archaeology of the Avars but the depiction on the silver plate from Isola Rizza probably offers a useful indication of the original use of this weapon: a mounted warrior protected by lamellar armour and banded helmet ('*Spangenhelm*') holding a long thrusting lance with two hands and piercing it through two enemy infantrymen.<sup>36</sup> The lack of stirrups in the representation could be a chronological indicator but equally may simply be a consequence of some artistic tradition.<sup>37</sup> The shaft of the spear could be 5–6 m long judging

32 The hoard was probably deposited during the Gothic War of Justinian, and the silver plate represented a Byzantine cataphract (Werner 1974, 110–111).

33 Bóna 1980, 42–48.

34 Attila Kiss identified reed-shaped spearheads with javelins (Kiss 1962, 93), while in some other cases javelin could be an erroneous translation of the word 'kopja = lance' (as '*Wurfspiess*': Salamon – Erdélyi 1971, 56–57) and 'javelin' (Sós – Salamon 1995, 67).

35 von Freeden 1991, 610, n. 107.

36 Von Hessen 1968, 47. Abb. 3, 68. Taf. 41–43; Werner 1971, 110–111. The hoard is usually dated to the middle of the 6th century (von Hessen 1968, 68).

37 See the representation of the 'victorious prince' on the 2nd jar of the Nagyszentmiklós hoard without stirrups (Bálint 2004a, 370).



by the proportions of the mounted warrior,<sup>38</sup> which is equal to the length of the Byzantine *'kontos'*.<sup>39</sup> However, this type of lance was not only known in Byzantium but also in Inner Asia where it was represented on petroglyphs,<sup>40</sup> and its use by the Turks is attested by Chinese written sources.<sup>41</sup>

Similar representations are known in the Middle East during the Parthian and Sassanian periods.<sup>42</sup> The use of the lance is connected to the heavy armoured cavalry (*cataphractarii* and *clibanarii*), which was well known in Europe from the Late Roman period, and it was an important unit of the Byzantine army of the 7th century as well.<sup>43</sup> The Late Roman name for the lance was the *'contus'* (or *'kontos'* in Greek),<sup>44</sup> though Maurice used the term *'kontarion'* even for the lances of the Avars,<sup>45</sup> which were equipped with small straps and a flag according to his description.<sup>46</sup>

In all of the known representations lances were held in two hands supporting them from below and they were positioned either parallel with the body of the horse or was placed on the neck of the horse, from where it could be used against both mounted or infantry enemy.<sup>47</sup> The stirrup was not necessary for its use, since the Late Roman or Sasanian heavy armoured cavalry also did not use stirrups, though this artefact could enhance the effectivity of the lance's use.

The heavy cavalry had very limited ability in maneuvering, and consequently it could only be used effectively in a closed formation, and was used to enact a decisive attack during a battle after confusing the enemy with arrows.<sup>48</sup> István Bóna estimated the number of Avar heavy armoured cavalry to be between 1,000 and 3,000,<sup>49</sup> though these units would have composed only a small proportion of the Avar army.

38 von Freeden 1991, 622; Maurice II 6, 11 (Dennis – Gamillscheg 1981, 123).

39 For the 5–6 m long spear-shafts see Koliaš (1988, 192).

40 Khudjakov 1986, 166–167.

41 According to the Zhou-shu: *'Als Waffen besaßen sie Bogen, Pfeile, heulende Pfeilspitzen, Panzerjacken, lange Reiterspieße und Schwerter; als Gürtelschmuck trugen sie auch Dolche.'* (Liu Mau-Tsai 1958, 9).

42 Gall 1990.

43 Mielczarek 1993; Khazanov 1968, 180–191.

44 Von Gall 1990, 76; Mielczarek 1993, 41–50; Koliaš 1988, 191.

45 Koliaš 1988, 191.

46 Maurice I. 2, 18. In: Dennis – Gamillscheg 1981, 79.

47 Mielczarek 1993, 44–45.

48 Mielczarek 1993.

49 Bóna 1984a, 321.

The significance (role) of the heavy cavalry continuously decreased during the Avar Age, reflected in the change from lamellar armour to chainmail.<sup>50</sup> The narrow conical spearheads also probably became more widespread as a reaction to this change in defensive armoury.

The use of the great lenticular spearheads presupposed a completely different fighting method, since their long and thin blade could not withstand a heavy frontal attack, as a result of which the blade could break or be deformed. Some traces suggest such damage to flat lenticular spearheads with curved blades, like in the case of the spearheads from grave No. 778 at Budakalász–Dunapart, 67 of Gyód<sup>51</sup> and from grave No. 443 at Kölked–Feketekapu B.<sup>52</sup>

The socket of this spear type is always closed, offering stability against lateral forces. The roughly 20 cm long edges of the blade were suitable for using it for cutting.<sup>53</sup> The socket of these lenticular spearheads is much narrower than that of the reed-shaped examples, meaning that the diameter of their shaft was smaller and therefore more fragile. All these indications suggest its use in infantry combat. The shaft length of the Byzantine infantry spears was around 2–3 m according to Byzantine written sources.<sup>54</sup> This type is mainly known from the Merovingian cemeteries of Transdanubia and it was often combined with an umbo, and therefore it can rightly be described as polearm of the Germanic troops fighting in the Avar army.<sup>55</sup>

The smaller version of these lenticular spearheads (P.111/1.b) had an extremely narrow socket, also suggesting a narrow and fragile shaft. This weapon type was usually deposited in pairs, their weight being much lower than other spearheads, and therefore this type can be identified as a throwing weapon or javelin.<sup>56</sup> This suggestion is supported by the Strategy of Maurice who described Slavic warriors with two or three javelins.<sup>57</sup> This weapon type is only known from Early phase Transdanubia, though it is also known from a Gepidic cemetery of the second half of the 6th century near the Tisza river.<sup>58</sup> The ethnic interpretation of this type cannot be readily proven.

50 Csallány 1972. For the chainmail of the Late phase see Garam (1995, 354).

51 Kiss 1977, Pl. IX. 5.

52 Kiss 2001, II. 96, Taf. 82/ 4.

53 Similar traces were observed on the spearheads of Nydam by Andreas Gundelwein (1994, 328, 333).

54 Koliaš 1988, 186–187, 192–193.

55 Kiss 1992; Kiss 1999/2000.

56 Sós – Salamon 1995, 72.

57 For the accounts of Maurice and John of Ephesus see Zášterová (1971, 78).

58 Grave No. 43 at Kisköre–Papp tanya (Bóna – Nagy 2002, 194; Taf. 29/6–7).

The decreasing number of spearheads from the Late phase (200 Late phase examples compared to the 404 Early phase spearheads) demonstrates the declining role of the polearm which can be partly explained by a decline in the heavy armoured cavalry. However, the Late phase is characterised by a considerable typological diversity in the polearms: the conical spearhead became dominant, the lenticular spearhead remained in use, and the triangular spearhead appeared. The real function of the hooked spearheads belonging to this latter group could be likely symbolic rather than real, since these huge spearheads (length of 50 cm) were not suitable for real fighting.

The increasing popularity of throwing weapons (javelins) is an interesting new development in the period which does not contradict its use as a cavalry weapon,<sup>59</sup> though similar weapons were mainly used by infantrymen.

Edged weapons are difficult to classify in respect of the equipment of different fighting units, although a general trend from double-edged swords to single-edged blades can be observed, which probably suggests significant changes in fighting methods. The starting point of this development could be the change in the suspension of these swords: the new two-point and sloping suspension facilitated the pulling out of the sword and made possible the use of the lighter and probably cheaper single-edged sword. The other main reason for these changes could have been the use of the stirrup, facilitating the mounted use of edged weapons.

All these preconditions led to the emergence of the sabre: the single-edged blades of triangular cross section were not suitable for thrusting, and therefore a second, false edge was formed on their tip. The curved blade was more suitable for cutting than the straight one, and therefore the blade became slightly curved. This process facilitated the use of edged weapons in light cavalry. This process can be described from an evolutionary or typological perspective as a necessary change in single-edged swords leading to the development of the sabre. However, the details of Avar-age sabres contradict this theory of a unilinear development, the significance of the straight single-edged blades being attested by their continued use well after the appearance of these sabres.

Carolingian influences on Late Avar weaponry can be demonstrated mainly in terms of the seaxes, and firstly by the long seaxes. The main reason of their use can be explained by the great popularity of straight single-edged swords,

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59 The mounted use of the javelin is also demonstrated by a popular sport in Turkey called 'cirit': <http://www.turkishculture.org/pages.php?ChildID=231&ParentID=12&ID=60&ChildID1=231>

and therefore the Carolingian double-edged swords were alien to Avar weaponry, and they never spread widely among the Avars.<sup>60</sup>

All of these changes happened so fast it is difficult to determine their actual sequence: the growing popularity of light cavalry could have led to the formation of the sabre but conversely it could have happened with the sabre as the starting point. Either of these assumptions are valid, and probably this transformation was as a result of a series of interactions resulting in the above mentioned developments.

The history of Avar-age weaponry cannot be described only by two close combat weapons, for these comprised only a small proportion of the overall ancient fighting equipment, and several fighting units are mentioned in the written sources which cannot be detected by archaeological means, like for example the torsion artillery.<sup>61</sup>

The effectivity of the Avar army changed considerably from the Early phase, when it challenged the Byzantine Empire and lay siege to several important cities, to the Late phase, when the Avar Qaganate became a regional power and could not withstand the army of Charlemagne.

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60 For the integration of long seaxes into Late Avar weaponry, see: Szóke 1992, 95; Szóke 1999, 85.

61 Besides stone-throwing siege-engines like the '*Helepolis*' (Dennis 1998, 101; Kardaras 2005, 53–65), there were testudos and wall-breaking rams (Miracula St. Demetri; Lemerle 1979, 139, 148.26–149.6; Kardaras 2005, 55) and siege towers (Lemerle 1979, 203; Kardaras 2005, 56) being used as well, sometimes in great quantities like at Thessaloniki (Lemerle 1979, 151; Vryonis 1981, 384; Bóna 2000c, 167–170).

## General Conclusions

Edged weapons and polearms comprised a significant part of Avar-age close combat weapons: such weapons were found as part of 1187 burial assemblages, which represents only a small proportion of all the known burials but which is nonetheless the largest series of such artefacts from the region. Tivadar Vida estimated the number of Avar burials to be 60,000, which means that 2 % of all the graves and 6 % of all the male burials were furnished with close combat weapons.<sup>1</sup> The chronological and geographical distribution of these weapons is not even, which is a consequence of mainly on the burial rite of the community differing by region: some regions are devoid of weapons in spite of the great number of excavated Avar cemeteries,<sup>2</sup> while others are well represented by just one weapon type.<sup>3</sup> The geographical distribution of some weapon types shows significant differences, like for example in the case of Early Avar Transdanubia.<sup>4</sup>

The chronological distribution of these close combat weapons demonstrates a decreasing importance through their deposition in burials. While the earliest burials of the cemeteries from the Middle and Late phase are furnished with edged weapons, the latest graves are usually without any fighting equipment.<sup>5</sup>

The classification of weapons and the reconstruction of typological developments can help in the determination of their function, and the early medieval close combat weapons of the Carpathian Basin can then be compared with the international results of similar weapon research and even their chronology might be determined more exactly.

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1 Vida 2003, 304.

2 See the Christian Late Antique population of the Keszthely culture, while the similar population in county Baranya around Pécs used the weapon burial rite.

3 The lack of some weapon type is mainly characteristic for polearms: no spears are known from the Southern part of Small Hungarian Plain, Ipoly valley (Želovce) and some Middle phase cemeteries.

4 See the distribution of spearheads of type P.III/1 mainly in Transdanubia.

5 This observation is supported by the cemetery at Hajdúböszörmény–Csíkos tanya and Berettyóújfalu, where only the earliest burials were furnished with weapons, while in some cemeteries of the northern periphery the weapon burial rite lasted until the end of the Avar Age. (Zábojník 1995).

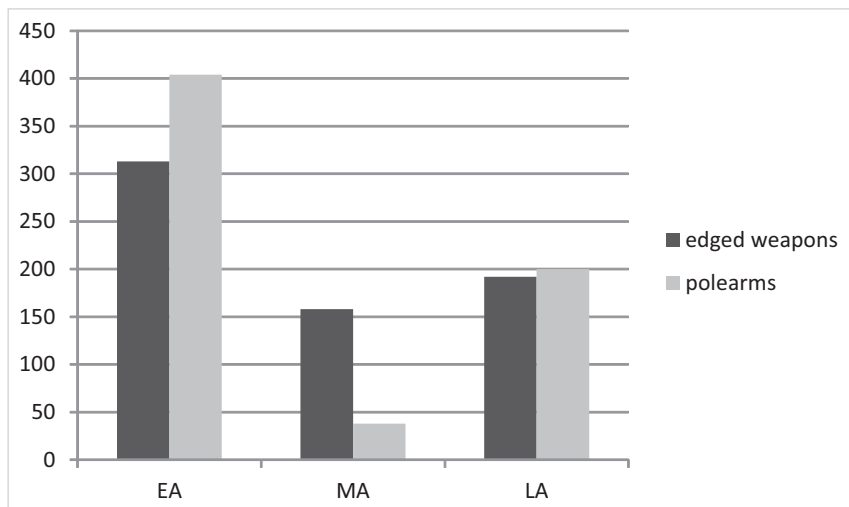


DIAGRAM 24 *Chronological distribution of polearms and edged weapons in the Avar-age Carpathian Basin.*

The polearms and edged weapons show diversity in their primary attribute, being the form of blade. Their classification demonstrates that the functional characteristics of the weapons changed only slowly, and narrower chronological distinctions cannot be made from them, while their decoration as a secondary attribute was subject to much more rapid transformation and can be dated more accurately. Typological processes can be observed in the case of some types, however, these changes are not unilinear and this method can be used only for tracing some characteristic tendencies.

The common classification of polearms and edged weapons is particularly important for their diachronic study. Several important processes in the evolution of these weapons can be observed, like for example the gradual spread of conical spearheads (P.II), the narrowing of reed-shaped spearheads (P.I) or the tendency toward the dominance of single-edged blades stretching across the three period system of Avar chronology.<sup>6</sup>

The development of the sabre has Eurasian importance amongst these wider processes, and is demonstrated in the large number of early sabres known from Avar cemeteries. The two main steps in the development of the sabre

<sup>6</sup> This conclusion is verified by the fact that the predecessors of Middle phase sabres are already known from the Early phase (Simon 1991).

was the appearance of the false edge and the curved blade.<sup>7</sup> This later process was not a unilinear development leading from straight blades to curved ones, for after the strongly curved blades of the second half of the 7th century most of the 8th century blades are only slightly curved and the number of straight single-edged swords was also high during this period.

The second main outcome of this study has been to show that edged weapons of several types were used contemporaneously, though in changing proportions. There is also no direct relationship between the blade of the edged weapon and their fittings: the same types of suspension loops or crossguards can occur on double- and single-edged blades or on straight single-edged and curved sabre blades. However, the individual elements of these fittings demonstrate a close relationship with each other, and we can talk about sets being combined with each other in a specific order.<sup>8</sup>

Older versions of artefacts did not disappear automatically with the introduction of a particular innovation, since it would have taken time for verification of the changes effectivity. Several transitional attributes were used side by side, and only the most effective survived, as in the case of natural selection.<sup>9</sup>

All of the Avar-age close-combat weapons were forged of iron; however, the manufacturing techniques differed significantly by weapon type and period. Besides the Early phase spathae with their pattern welding in fishbone-shape,<sup>10</sup> very well preserved reed-shaped spearheads (P.II/1.a–b) and stirrups with rectangular loops are known, all which were probably manufactured in Byzantine workshops.<sup>11</sup> The later phases are characterised by a simple cementation or forge welding of single-edged blades,<sup>12</sup> whilst often no tempering or heat treatment was used for improving the quality of the blade, resulting in weapons of very poor quality.<sup>13</sup>

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7 This study did not follow the trend whereby the false edge is regarded as the main attribute of the sabre (Bálint 1992; Bálint 1993; Bálint 1995a), since a great number of curved sabre blades (88 examples) are known from the period.

8 The triple arched suspension loops always appear on ring-pommel swords with crossguards, while oggee-shaped suspension loops only appear on edged-weapons with star-shaped crossguards covered by gold or silver.

9 This evolutionist approach can only be used on functional artefacts, since fashion-driven artefacts change according to a different logic.

10 The same technique was used in Merovingian Europe (Koch 1977, 98. Taf. 182–188).

11 The supposed Inner-Asian origin can be rejected due to the lack of analogies from these regions. These artefacts were forged and not cast. See the technological analysis of Piaskowski (1974).

12 Pleiner 1967.

13 Mihók et al. 1995; Mehofer 2006.

The deposition of polearms and edged weapons in burials does not help in determining how they were worn, though polearms were usually placed next to the horse's head or to the right foot of the deceased, whilst swords were usually unbuckled and placed next to the left arm of the men, which might suggest the original wearing position and contradicts their interpretation in terms of an inverse afterlife.

The study of the chronology of polearms and edged-weapons can offer interesting comparative results, suggesting a chronological gap between the western, Merovingian cemeteries and the Eastern European burials. These two chronological schemes can only be unified with the help of the Avar finds of the Carpathian Basin.

Methodologically, the chronological meaning or relevance of the appearance of the same artefact type should be discussed further, since chronological shifts can appear in such cases. The chronological study of Heiko Steuer should be a warning against using too narrow a chronological scale.<sup>14</sup>

The Avar-age close-combat weapons were influenced by various cultures from different directions; however, most of them were native to the Carpathian Basin. This region lay at the crossroads of Eastern influences from the steppes, and Mediterranean and western (Merovingian and Early Carolingian) influences, and was a contact or buffer zone from the beginning of the Neolithic. Such long-term processes can be observed in internal regional differences, reflected by the different external contacts of Transdanubia and the Great Hungarian Plain.

Eastern contacts with the steppes have always been the most intensely studied since the beginning of Avar archaeology, motivated by the Inner Asian origin of the Avars. However, these studies were hindered by the huge geographical distances represented, the small number of Inner Asian finds and their late date, making impossible the detection of direct links between Inner Asia and the Carpathian Basin, with only some very general functional elements proving useful as analogies.

A special aspect of Avar sword studies is the comparison of ring-pommel swords with Far Eastern analogies.<sup>15</sup> Some elements of Avar armament, like ring-pommel swords, stirrups with long rectangular loops, and lamellar armour can be found in Eastern Asia, though with some significant technological

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14 Steuer 1998, 129–149.

15 Bóna 1980, 51.



differences.<sup>16</sup> These elements are distributed across a broader period<sup>17</sup> than just the Avar Age in the Carpathian Basin and only some general functional features can be compared with those of Avar examples. Even the means of their transmission have not yet been clarified.<sup>18</sup> Another problem is that the Far East was often treated together along with Inner Asia in Hungarian research although these regions are clearly distinct both in geography and their culture.<sup>19</sup>

Sogdian wall paintings are well known sources of Avar archaeology in the works of Gyula László but their use is problematic for a number of reasons: their schematic representation, the great geographical distance, and their different cultural milieu. These wall paintings can be used as analogies for Early Avar swords but only with caution; however, contemporaneous phenomena can be treated as reflections of the international trends in weapon history.<sup>20</sup>

The archaeology of the Eastern European steppes has been better studied, and it can offer more analogies for the Carpathian Basin, than the more remote areas of Eurasia. The above mentioned problems are still, however, valid for this region: weapons are generally similar but different in their specific details and, not surprisingly, mostly weapons from closer regions and from the same period provide the best parallels.

The interpretation of Mediterranean contacts has revealed some different problems, like the very small number of Byzantine weapon finds. Most of the weapons in the Mediterranean were found in Barbarian burials, and therefore their weapons can be taken to reflect the weaponry of their gentile army,<sup>21</sup> for example in Italy, where most of the weapons were found in Lombard burials.<sup>22</sup> In spite of all these problems, a continuous influx of Mediterranean weapons into the Carpathian Basin can be observed from the 6th to the 9th century.

Western influences continuously reached the Avar-age Carpathian Basin from the beginning of this era until its end. Most of the artefacts of western

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16 Korea of the Silla period (Ito 1971), Japan in the Kofun period and China during the Tang period (Koch 2006).

17 Both the stirrups and ring-pommel swords appeared much earlier, during the 4th century in China (Koch 1998a).

18 while the stirrup and ring-pommel swords are probably of Chinese origin, the *p*-shaped suspension loops likely reached China from the West.

19 Bóna 1980; Bóna 1984a; Simon 1991.

20 However, it is important to note that all of these paintings were made well after the appearance of the Avars in the Carpathian Basin, during the 7–8th centuries, whilst the wall paintings of Afrasiab are dated to 648 (Móde 1993, 200).

21 See chapter VII.2.

22 See the openwork spearheads of the Early phase in Transdanubia.

origin were found in Eastern Transdanubia during the Early phase. Some of these influences arrived from Italy into the Carpathian Basin, while the way along the Danube from Bavaria could also have been significant.

The dynamics of western contacts changed significantly from the Middle phase, when weapons of western origin were concentrated in the northwestern part of the Carpathian Basin. The seaxes were an important part of Avar close combat weaponry and most of them from this period have been found in Southwestern Slovakia. These features were characteristic for the Late phase as well. Some spearheads of western origin (Egling type and hooked spearhead) appeared near the northwestern gate of Danube to the Carpathian Basin which is probably as a result of the Carolingian weapon trade, prohibited by the capitulare of Charlemagne.<sup>23</sup>

The weapon burial rite was connected to some other aspects of burial custom, like horse offerings, burials with ornamented belt, golden or silver grave goods and the adult or senile age of the deceased. However, there are some exceptions, with horse burials being unknown in some communities and several male burials with weapons did not have ornamented belts. Some children's graves with weapons are also known.

All of the above listed factors will influence the social interpretation of weapon burials, though some general observations can be made. In the Early phase in Transdanubia and Transylvania there appears to have been an armed elite, represented by burials with characteristically Merovingian weapons and weapon combinations. These Merovingian contacts were strong not only in the field of weaponry but also in pottery manufacturing, female costume and burial customs.<sup>24</sup> Even if the Gepidic identification of this Pannonian populations is in question, their Merovingian contacts cannot be denied.

Swords covered with gold sheets are concentrated in the central part of the Carpathian Basin, in the Danube-Tisza interfluvium, during the Early phase and their concomitance with the ring-pommel swords might suggest a high social significance for this sword type (map 55). The geographical concentration of these swords in a small region (Danube-Tisza interfluvium) might also suggest the high status of this region, which was probably not only geographically but

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23 The capitulare of Charlemagne from the year 805 established checkpoints in Regensburg and Passau along the Danube (Capitulare 44, 7, 123; Szádeczky-Kardoss 1992, 307; Pohl 2002, 195).

24 For the Gepidic continuity in Transdanubia, see: Attila Kiss (1987b, 203–278; Kiss 1992, 35–134; Kiss 1999/2000, 359–365; Kiss 1996; Kiss 2001). Tivadar Vida observed similar features in Transdanubian pottery and female costume (Vida 1999a; Vida 1996, 107–112; Vida 1999/2000, 367–377; Vida 1995, 221–295; Vida 1999b, 563–574; Vida 2008, 18–31).

also politically the centre of the Qaganate. These ostentatious weapons were probably distributed by the Qagan or his immediate retinue as gifts, and they can therefore be identified as prestige goods.<sup>25</sup> This assumption leads us to the question of the retinue of the Avar ruler, a subject well studied for Merovingian gentile kingdoms.<sup>26</sup>

The reconstruction of social hierarchies is very difficult on the basis of close combat weapons or combinations of grave goods. The sabres with star-shaped crossguards covered with gold or silver foils were distributed in Eastern Transdanubia, and therefore István Bóna identified the qagan's seat in this region. However, such combinations and artefacts are also known from other regions of Transdanubia. The distribution of these burials in this region might instead represent differences in various social groups and communities. It is more likely that the seat remained in the Danube-Tisza interfluvium, where new representative media emerged and developed without the need for the deposition of large amounts of gold or silver, this region being characterised by a lack of weapon burials during the Late phase.

The geographical distribution of close combat weapons shifted towards the peripheries (first of all toward the northwest) during the Late phase, where such weapons were deposited until the beginning of the 9th century. The weapon burial rite and horse offerings were probably important parts of their identity, emphasising their integrity and warrior-like nature against the various neighbouring ethnic groups, cultures and Christianity. Consequently, this burial rite can be considered a forced representation under an outer pressure,<sup>27</sup> while no or only very few traces of close combat weapons are known from the central area during the Late phase.

The transformation of this representational approach led to changes in the geographical distribution of weapons and their mode of social representation. The second half of the 6th and first third of the 7th century is characterised by a Merovingian type of representation, while from the second third of the 7th century a Byzantine type representation appeared in the Danube-Tisza interfluvium, probably inspired by the loss of Byzantine gold and under a new demand to parade wealth and power in imitation of a more complex

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25 The role of the gift was also emphasised by Walter Pohl (2002, 182–84).

26 The retinue has been studied archaeologically by Heiko Steuer (1992, 203–257).

27 The outer pressure as force of cohesion was emphasised by Abner Cohen (1969) on ethnic identity, and it even affected archaeology: Ian Hodder (1982) described archaeological cultures as a competition between symbols emphasising the role of conflict in the formation of communities.

civilisation (*'Imitatio Imperii'*).<sup>28</sup> From the middle of the 7th century a cultural transformation led to a new type of armed elite, which gave way to the warrior culture of the periphery during the 8th and first half of the 9th century.

The major function of every offensive weapon is to injure or kill the enemy but various symbolic meanings can also be attributed to weapons, and therefore not only its effectivity is important but also its role within social systems like the Avar army and society. Some of the weapons are suitable for identification in respect of their original function, while others reveal aspects of social hierarchy. Most weapons, however, are simply a basis for tracing the changing tendencies of armoury, since they were developing in close interaction with one another.

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28 See the so-called '*Prunkgrab*' concept of Georg Kossack (1974, 32).



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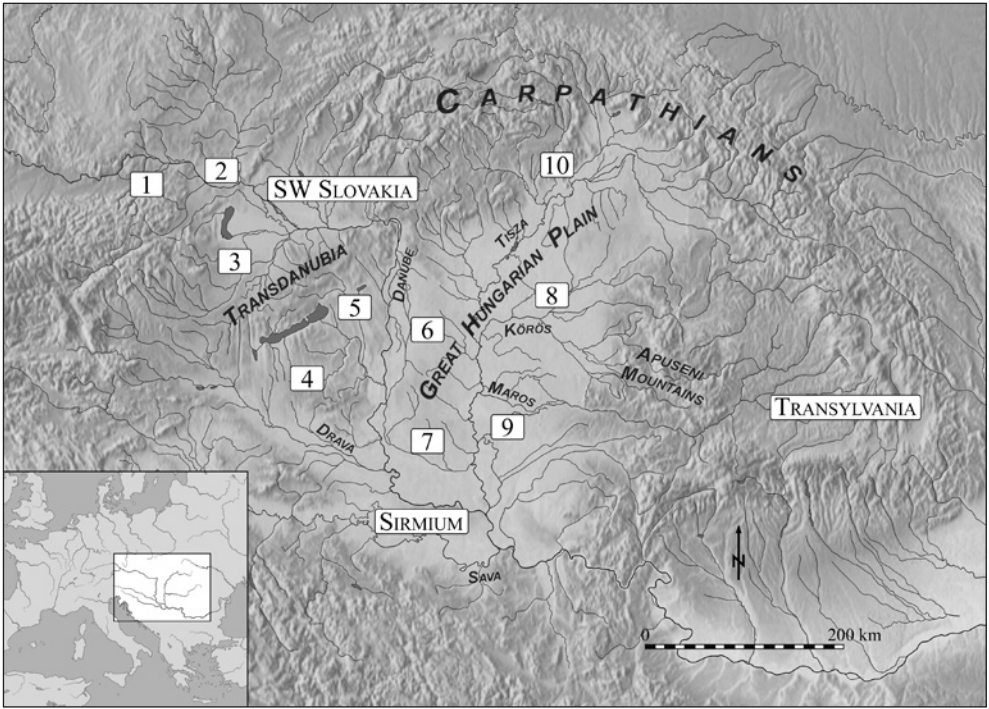
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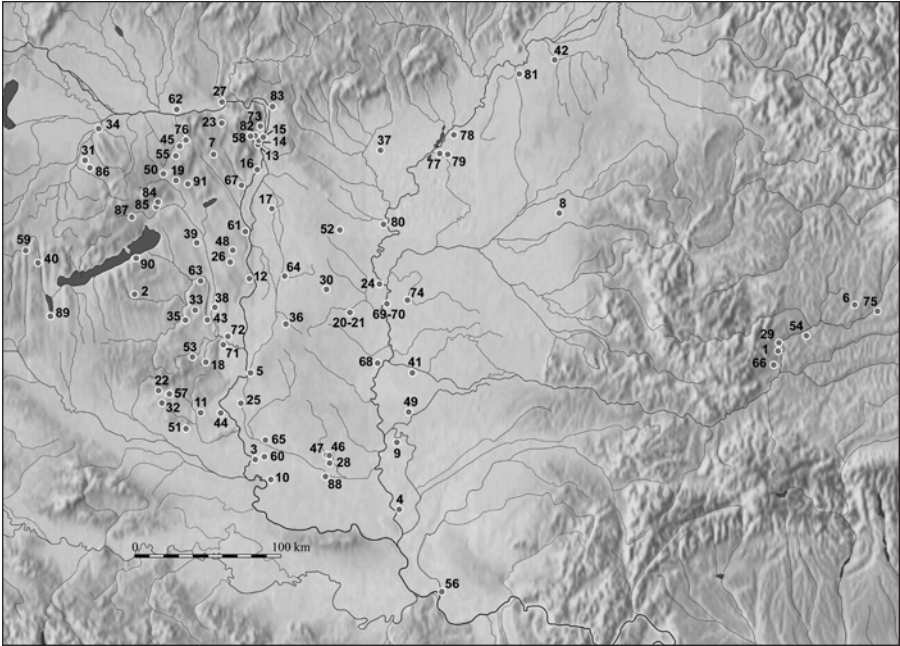
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# Maps

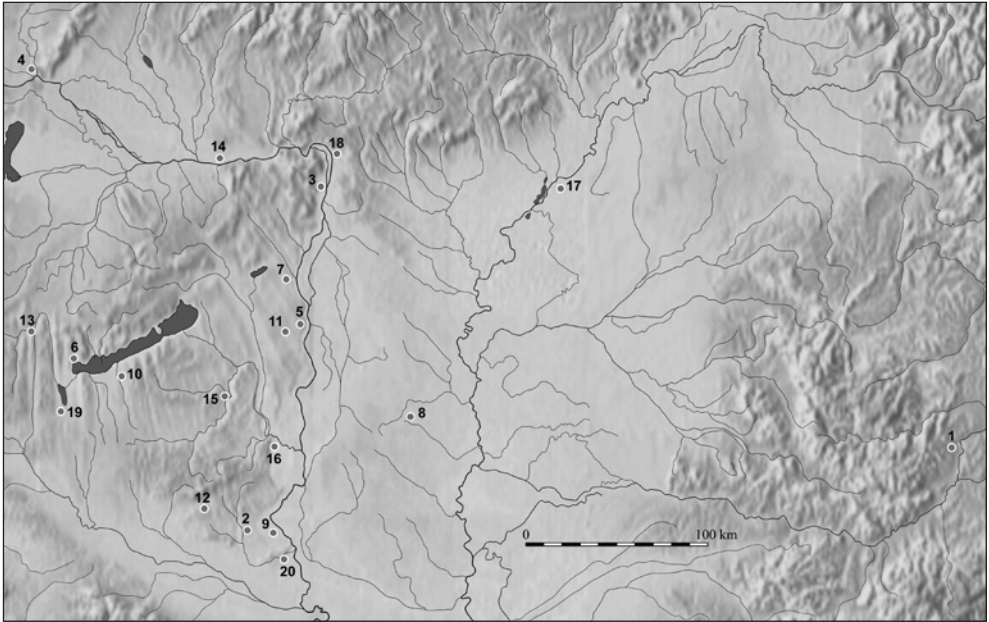


MAP 1 *Regions of the Carpathian Basin*  
1. Vienna Basin, 2. Devín's Gate, 3. Little Hungarian Plain (Kisalföld), 4. Southern Transdanubia, 5. Eastern Transdanubia, 6. Danube-Tisza interfluve, 7. Vojvodina (Bačka/Bácska), 8. Transtisia (Tiszántúl), 9. Banat, 10. Eastern Slovakia (Košice Basin/Hernád valley)



MAP 2 *The distribution of Early Avar polearms*

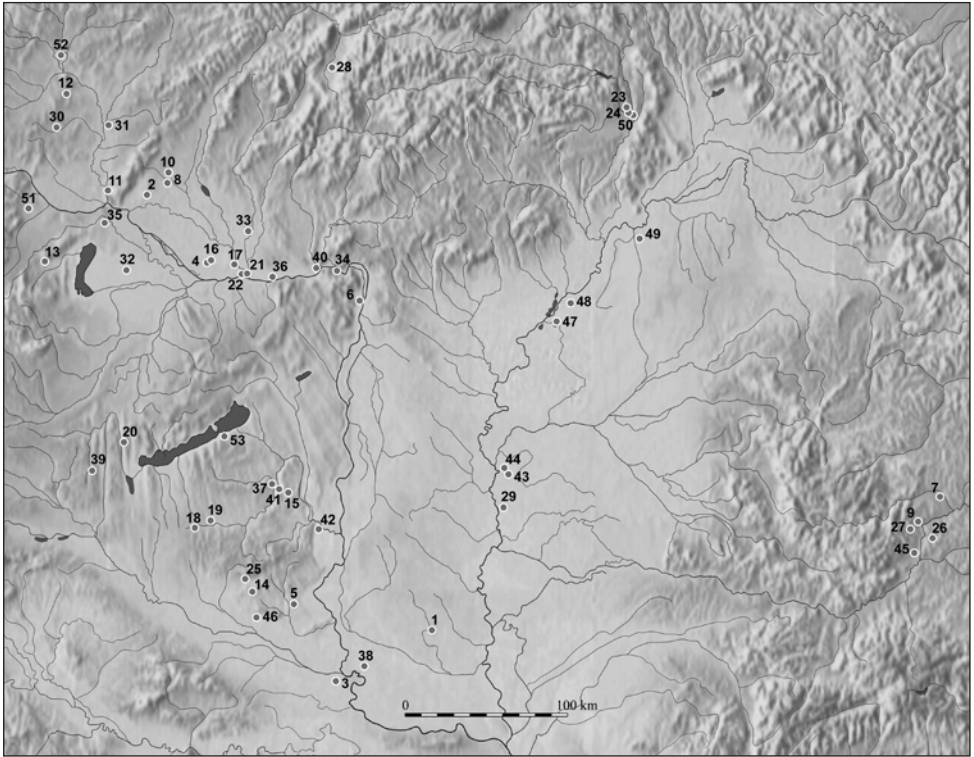
1. Aiud, 2. Andocs, 3. Apatin, 4. Aradac–Mečka, 5. Baja–Allaga szőlő, 6. Band,
7. Bicske–Óbarok, 8. Biharkeresztes–Lencsésút, 9. Bočar pod Kikinde, 10. Bogojevo,
11. Bóly–Sziebert puszta, 12. Bölcske–Kömlödi út, 13. Budakalász–Dunapart, 14. Budapest III. Szentendrei út, 15. Budapest IV. Káposztásmegyer, Váci orszáágút, 16. Budapest XXI. Csepel–Háros, 17. Áporka (Bugyi)–Ürbőpuszta, 18. Cikó, 19. Csákberény–Orondpuszta,
20. Csengele–Feketehalom, 21. Csengele–Jójár, 22. Cserkút–Szőlők, 23. Csolnok or Dág, 24. Csongrád–Öregszőlő, 25. Dávod–Rétaljai szőlők, 26. Előszállás–Bajcsihegy,
27. Esztergom–Feketehegy, 28. Feketić, 29. Gâmbaş, 30. Gátér–Vasútállomás, 31. Gyarmat–Királydomb, 32. Gyód–Máriahegy, 33. Gyöng–Vásártér, 34. Győr–Ménfőcsanak–Metro,
35. Hógyész–Szőlőhegy, 36. Imrehegy, 37. Jászapáti–M. Nagy tanya, 38. Kajdacs–Kiskajdacs, 39. Káloz–Nagyhörcsökpuszta, 40. Kehida–TSz major, 41. Kiszombor O,
42. Kótaj–Teleki birtok, 43. Kölesd, 44. Kölked–Feketekapu A–B, 45. Környe, 46. Lovćenac–Hollinger-ház (Szeghegy), 47. Mali Idoš, 48. Mezőfalva–Vasútállomás, 49. Mokrin,
50. Mór–Akasztódomb, 51. Nagyharsány–Szarkás-dűlő, 52. Nagykörös–Nyárkútrét-dűlő, 53. Nagymányok–Töppfner Á. Telke, 54. Nošlac, 55. Oroszlány I–II., 56. Pančevo,
57. Pécs–Köztemető, 58. Pilisborosjenő–Téglagyár, 59. Pókaszetek, 60. Prigevica Sv. Ivan (Bácsszentiván), 61. Rácalmás–Rózsamajor, 62. Radvaň nad Dunajom–Virt,
62. Selenča–Belterület, 63. Simontornya, 64. Soltszentimre, 65. Sombor–Kukula, 66. Stremč, 67. Százhalombatta, 68. Szeged–Kundomb, 69. Szegvár–Oromdűlő,
70. Szegvár–Sáppoldal, 71. Szekszárd–Bogyiszlói út, 72. Szekszárd–Tőszegi dűlő, 73. Szentendre–Pannónia dűlő, 74. Szentes–Lapistó, 75. Târgu Mureș, 76. Tatabánya–Bánhida, 77. Tiszaderzs–Szentimrei út, 78. Tiszafüred–Majoros, 79. Tiszaszentimre–Református templom, 80. Tiszavárkony–Hugyínpart, 81. Tiszavasvári–Koldusdomb,
82. Üröm, 83. Vác–Kavicsbánya, 84. Várpalota–Gimnázium, 85. Várpalota–Unio-homokbánya, 86. Vaszar–Törét, 87. Veszprém–Jutas, 88. Vrbas–ciglana Polet, 89. Zalakomár–Lesvári-dűlő, 90. Zamárdi–Rétiföldek, 91. Zámoly



MAP 3 *Polearms from the Middle Avar Period in the Carpathian Basin*

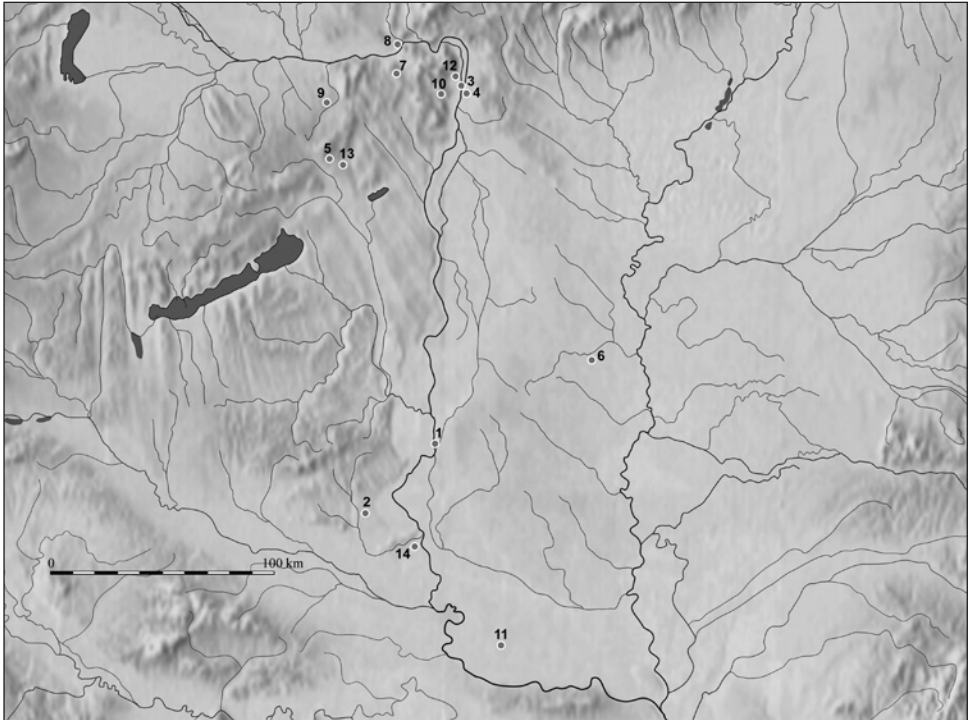
1. Aiudul de Sus, 2. Bóly–Sziebert puszta, 3. Budakalász–Dunapart, 4. Devinská Nová Ves, 5. Dunaújváros–Simonyi dűlő, 6. Gyenesdiás, 7. Iváncsa–Szabadság utca 20, 8. Kiskunmajsa–Pálos, 9. Kölked–Feketekapu A–B, 10. Lengyeltóti–Pusztaberény, 11. Mezőfalva–Vasútállomás, 12. Pécs–Kertváros, 13. Pókaszepetk, 14. Radvaň nad Dunajom–Žitavská Tůň, 15. Regöly–Kupavár, 16. Szekszárd–Bogyiszlói út, 17. Tiszafüred–Majoros, 18. Vác–Kavicsbánya, 19. Zalakomár–Lesvári-dűlő, 20. Zmajevac





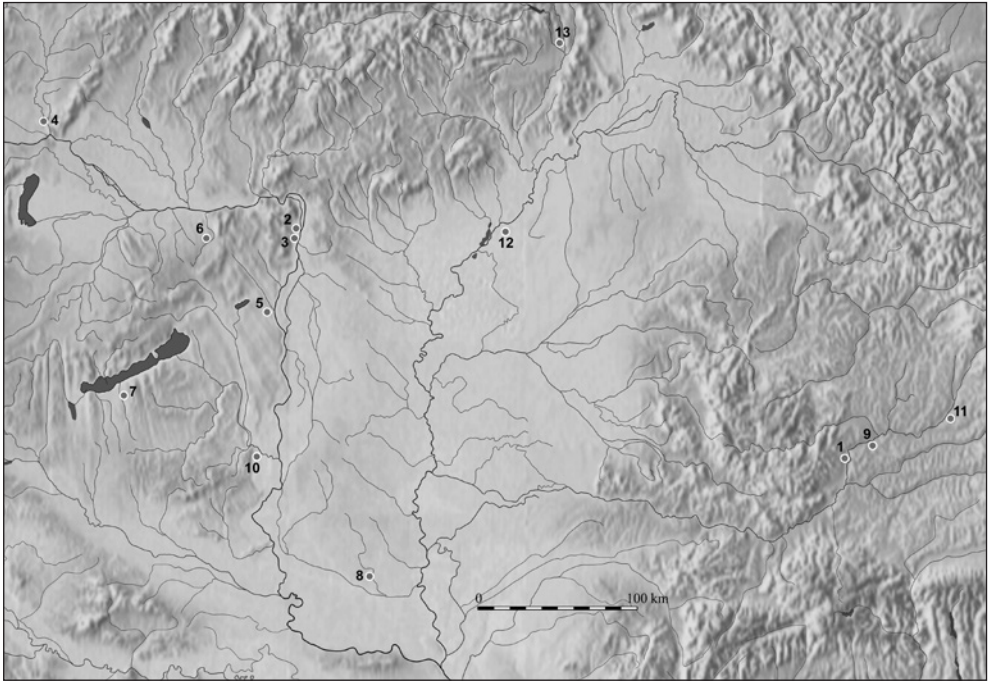
MAP 4 Polearms from the Late Avar Period in the Carpathian Basin

1. Bačka Topola–Bankert-klanica, 2. Bernolákovo, 3. Bijelo Brdo, 4. Bođa, 5. Bóly–Sziebert puszta, 6. Budakalász–Dunapart, 7. Câmpia Turzii, 8. Čataj, 9. Cicău–Szelistye, 10. Cífer–Pác I. Nad mlynom I, 11. Devinská Nová Ves A, 12. Drasenhofen (Katzelsdorf), 13. Grosshöflein, 14. Gyód–Máriahegy, 15. Gyöng–Vásártér, 16. Holiare, 17. Kameničná, 18. Kaposmérő–Agyagbánya, 19. Kaposvár–Toponár–40. számú őrház, 20. Kehida–TSz-major, 21. Komárno–3. Váradího u., 22. Komárno–8. Shipyard, 23. Košice–Barca, 24. Košice–Šebastovce, 25. Kővágószőlős–Tüskési Dűlő, 26. Lopadea Noua, 27. Magina, 28. Mały Čepčín, 29. Mártély – Ómártély, 30. Mistelbach, 31. Morávký Sv. Ján, 32. Mosonszentpéter, 33. Nové Zámky, 34. Pilismarót–Öregék dűlő, 35. Potzneusiedl, 36. Radvaň nad Dunajom–Žitavská Tůň, 37. Regöly–Kupavár, 38. Sonta, 39. Söjtör–Petőfi utca, 40. Stúrovo, 41. Szárzad, 42. Szekszárd–Bogyiszlói út, 43. Szentés–Nagyhegy, 44. Szentés–Felsőcsordajárás, 45. Teiuș, 46. Terehegy–Márfai dögkút, 47. Tiszaderzs–Szentimrei út, 48. Tiszafüred – Majoros, 49. Tiszavasvári–Petőfi u. 50, 50. Valaliky–Všechsvätých, 51. Vösendorf, 52. Vranovice, 53. Zamárdi–Rétiföldek



MAP 5 *Distribution of reed-shaped spearheads with connecting chap*

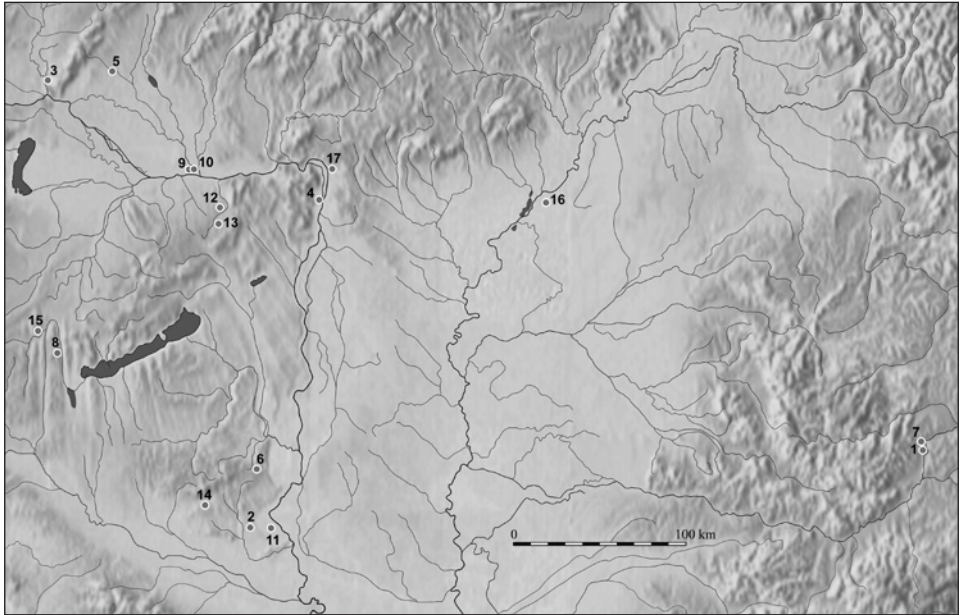
1. Baja–Allaga szőlő (Roediger 1903a, 144–145; Roediger 1903b, 272–276; Hampel 1905, II. 840–842; Gubitza 1909, 27; Kovrig 1955a, 36; Kovrig 1955b, 171.); 2. Bóly–Sziebert puszta, grave No. 21 (Papp 1962, 185., XXI. t. 4.); 3. Budakalász–Dunapart grave No. 19 (Erdélyi 1978, 48.); grave No. 281; grave No. 291; grave No. 705; grave No. 710; grave No. 715; grave No. 930; 4. Budapest IV. Káposztásmegyer–Váci országút (Kovrig 1955a, 37; Kovrig 1955b, 173; Nagy 1998. I. 53–54; II. 54, Taf. 46/1.); 5. Csákkberény–Orondpuszta grave No. 396 (IKM n.341); 6. Csengele–Jójiárt A (Csallány 1939, 129, VII. tábla 1–5; Kovrig 1955b, 42.); 7. Csolnok or Dág (MNM 12/1951, Kovrig 1955b, 168, Pl. IV/3–5.); 8. Esztergom–Nagyhegy (Hampel 1900, 113; Hampel 1905. II. 346; Kovrig 1955a, 36; X. tábla 6; Kovrig 1955b, 172, v. tábla 5.); 9. Környe grave No. 129 (Salamon – Erdélyi 1971, 27, 56, 100: Taf. 22/1, 135, Taf. XVIII/5.); 10. Pilisborosjenő–Téglagyár (Kovrig 1955a, 37; Kovrig 1955b, 173; MRT 7. 1986, 141–142.); 11. Selenča (Csallány 1953, 134, XXXI. tábla 6; Kovrig 1955a, 36, X. tábla 5; Kovrig 1955b, 171, V. tábla 5.); 12. Szentendre–Pannónia dűlő (Pulszky 1874, 1–12; Hampel 1905. II. 343–345, III. Taf. 263–265; Kovrig 1955b, 170; Bóna 1982–83, 98–104; Garam 1992, 138, 183, Taf. 11, 9.); 13. Zámoly (Hampel 1903, 445; Csallány 1953, 137; Kovrig 1955a, 37, X. tábla 4, XII. tábla 1.; Kovrig 1955b, 174, v. tábla 4, VII. tábla 1. and MNM 61.202.1.); 14. Zmajevac (Vörösmart) (Csallány 1956, 1064, Garam 1982b, 210, Abb. 15.)



MAP 6 *Simple reed-shaped spearheads with long blade (P.I.B/1)*

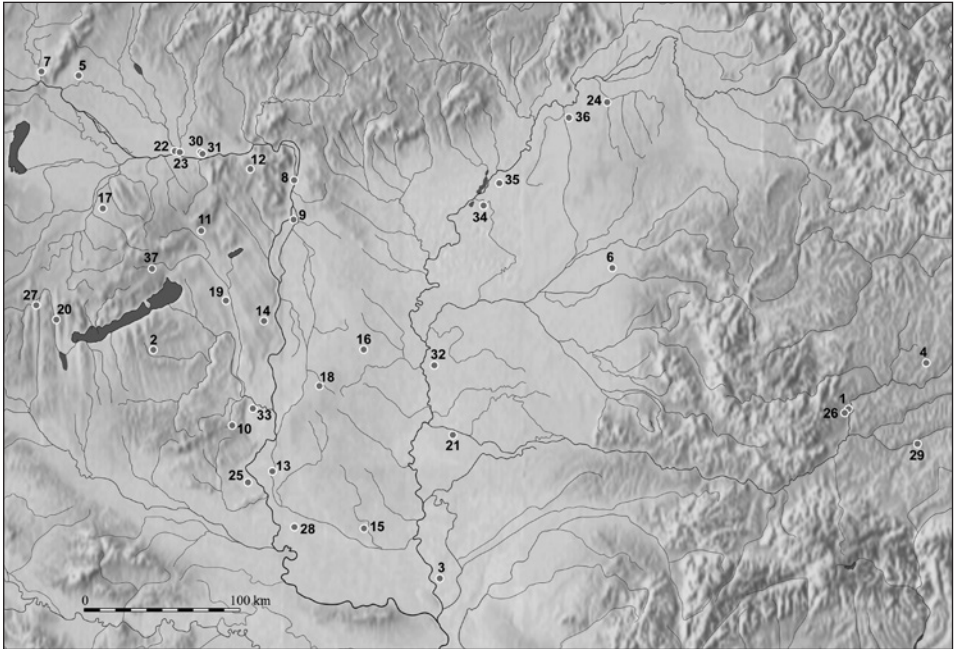
1. Aiud grave No. '111' (Horedt 1956, 396; Horedt 1958, 92., fig. 10/2,5.); 2. Budakalász-Dunapart grave No. 468; grave No. 689; grave No. 1158; grave No. 1225; grave No. 1483;
3. Budapest 111. Szentendrei út (Nagy 1998, 33. 11. Taf. 37/14.); 4. Devinska Nová Ves–A Tehel'ňa grave No. 124 (Eisner 1952, 41–42, Obr. 28/4.); grave No. 132 (Eisner 1952, 44, Obr. 20/4.); 5. Iváncsa–Szabadság utca 20. (Bóna 1970, 244., 8. kép 20.); 6. Környe stray find (Salamon – Erdélyi 1971, 30, Taf. 27/46.); 7. Lengyeltóti–Pusztaberény grave No. 5 (Bárdos 1978b, 82., 86., 6. kép 2.); 8. Lovćenac–Hollinger-ház (Szeghegy) (Roediger 1903b, 272–276; Garam 1992, 144., Taf. 50–51.); 9. Nošlac grave No. 6 (Rusu 1962, Fig.4/12.); 10. Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1999, 48., Taf. 24/15.); 11. Târgu Mureș, grave No. 'IX' (Kovács 1915, 284, 288, 46. kép); grave No. 'XIV'r (Kovács 1915, 290–291, 293. 52. kép); 12. Tiszafüred–Majoros grave No. 638 (Garam 1995, 82, Taf. 109, 182.); 13. Valalíky-Všechsvätých grave No. 98/84 (Husár 2005, tab. 1/4a-b)





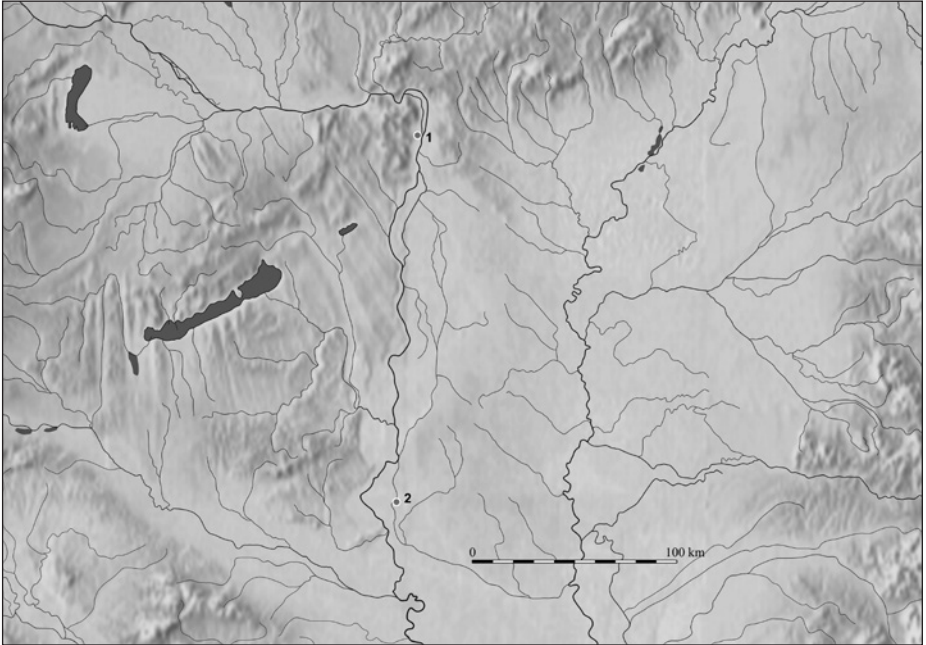
MAP 7 Simple reed-shaped spearheads with long socket (P.I.B/2)

1. Aiud grave No. '11' (Horedt 1956, 396; Horedt 1958, 91–92., fig. 10/14.); 2. Bóly–Sziebert puszta grave No. 20 (Papp 1962, 174–175, VII. t. 18.); 3. Devinska Nová Ves–A Tehel'ňa grave No. 234 (Eisner 1952, 65–66, Obr. 28/2.); 4. Budakalász–Dunapart grave No. 200 728;
5. Čataj I. Zemanské–Gejzovce grave No. 148 (Szentpéteri 1993, 121.); 6. Cikó grave No. 109 (Wosinsky 1896, 902; CCI. t.; Kovrig 1955b, 167; Kiss – Somogyi 1984, 45, 9. tábla 7.); 7. Gâmbaş grave No. 'I' (Horedt 1958, 96–97, fig. 14/1.); grave No. 'IX' (Horedt 1958, 99, fig. 14/2, 14/13.); grave No. 'XVII' (Horedt 1958, 100, fig. 14/14.); 8. Kehida–TSz-majör grave No. 2 (Szóke 2002, 77, 8/b.); grave No. 67 (Szóke 2002, 77, 8/f.); 9. Komárno–3. Váradiho u. grave No. 11 (Čilinská 1982, 349–351, tab. V/22.); grave No. 20 (Čilinská 1982, 354, tab. VII/25.); 10. Komárno–8. Shipyard grave No. 63 (Trugly 1987, 262–263, Taf. XIII/10.); 11. Kôlked–Feketekapu A grave No. 324 (Kiss 1996, 91–92, Taf. 68/11.); B grave No. 541 (Kiss 2001, 164–167, Taf. 90/1.); 12. Környe grave No. 124 (Salamon – Erdélyi 1971, 26, Taf. 124/36.); 13. Oroszlány I. grave No. 18 (Sós 1958, III. Abb. 22.); 14. Pécs–Kertváros grave No. 391 (Heinrich–Tamáska 2005, 148, 150, Abb. 1.); 15. Pókaszepetk–Mesterföledek, Avar utca grave No. 82 (Sós – Salamon 1995, 64–65, 67, 145, Pl. IX/1, Pl. LXXXI/1) grave No. 242 (Sós – Salamon 1995, 64–65, 67, 161, Pl. XVIII/1, Pl. LXXXI/5.); grave No. 332 (Sós – Salamon 1995, 166–167, Pl. XX.); No. 415 (Sós – Salamon 1995, 64–65, 67, 182, Pl. XXVII/12, LXXXI/6.); 16. Tiszafüred–Majörös grave No. 40 (Garam 1995, 13, Abb. 4, Taf. 173/4); 17. Vác–Kavicsbánya grave No. 103 (Tettamanti 2000, 24–25, Taf. 3/5.)

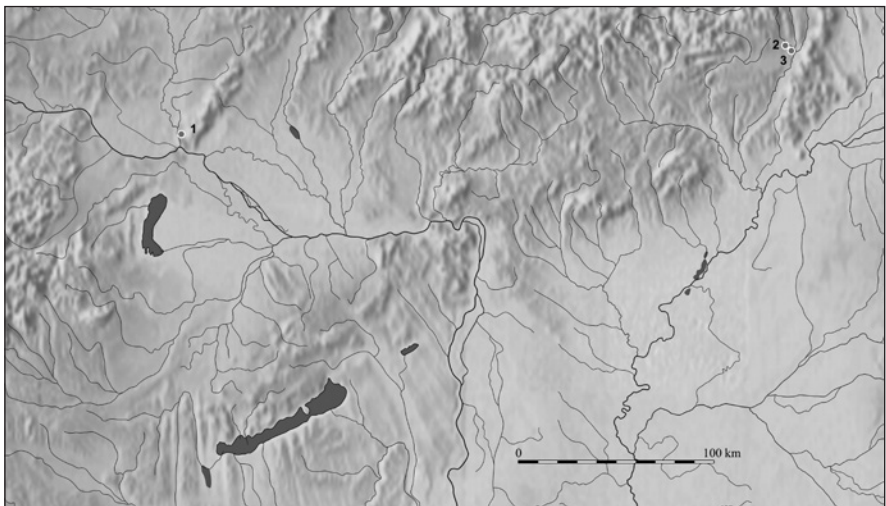


- MAP 8 *Simple reed-shaped spearheads with blade and socket of equal length (P.I.B/3)*
1. Aiud grave No. 'I' (Horedt 1956, 396; Horedt 1958, 91, fig. 10/1.); 2. Andocs–Újhalastó grave No. 17 (Garam 1973, 134, 6. ábra 40.); 3. Aradac–Mečka grave 'A' (Nád 1959, 63, tab. XIII/4.); grave No. 1 (Nád 1959, 55, 68. tab. 1/7; Mrkobrad 1980, 98, 152, LXXX/5, 6, 14.);
  4. Band grave No. 49 (Kovács 1913, 324, 42. kép); grave No. 52 (Kovács 1913, 324–325, 43. kép 15.); grave No. 142 (Kovács 1913, 345, 67. kép); grave No. 159 (Kovács 1913, 355, 77. kép);
  5. Bernolákovo grave No. 59 (Kraskovská 1962, 437–438, tab. XIII/4.); 6. Biharkeresztes–Lencsésát (Mesterházy 1987, 222, 6. kép/1–2.); 7. Devinska Nová Ves–A-Tehel'ňa grave No. 414 (Eisner 1952, 95, Obr. 55/7.); grave No. 585 (Eisner 1952, 130, t. 74/12.); grave No. 781 (Eisner 1952, 164, t. 110/5.); 8. Budakalász–Dunapart grave No. 55 (MTA RI 96.1.43.31); grave No. 68 (MTA RI 97.1.9.1); grave No. 299, 551, 577, 696, 719, 851, 993, 1047, 1155, 1156, 1162, 1177, 1300, 1330, 1338, 1380, 1495, 1506; 9. Budapest XXI. Csepel–Háros grave No. 28 (Nagy 1998, 152, Taf. 104/5.); 10. Cikó grave No. 553 (Kovrig 1955b, 168; Kiss – Somogyi 1984, 65., 40. tábla 36.); 11. Csákerény–Orondpuszta grave No. 78 (IKM 10.240); grave No. 108 (IKM 10.258); grave No. 147 (IKM 10.635); grave No. 169; 12. Csolnok or Dág (Kovrig 1955b, 168, Pl. IV/3–5; MNM 12/1951); 13. Dávod–Rétafjai szőlők, Vágner A. szőlője, stray find (Gubitzta 1908, 419–420; 7. kép; Gubitzta – Trencsényi 1908, 54, Taf. 26–27.); 14. Előszállás–Bajcsihegy grave No. 115 (IKM 52.186.1); grave No. 134 (IKM 52.203.1, Kovrig 1955b, 169.);
  15. Feketić–Ciglana (Hampel 1905. II. 718–719, fig. 1; Gubitzta 1908, 421; Dimitrijević – Kovačević – Vinski 1962, 41, Abb. 3; Mrkobrad 1980, 98, 152, T. LXXX/7.); 16. Gátér grave No. 239 (Kada 1906, 331; Kovrig 1955b, 169.); 17. Gyarmat–Királydomb (MRT 4. 1972. 112, 25. t. 1–5.); 18. Imrehegy (Balogh 2002, 305–306, 11. kép 4.); 19. Káloz–Nagyhörösökpuszta grave No. 2 (Bóna 1971a, 273.); 20. Kehida–TSz-major grave No. 22 (Szóke 2002, 77, 8/c.); 21. Kiszombor O grave No. 5 (Csallány 1939, 126, 4. kép 12.); 22. Komárno–3. Váradího u. grave No. 8 (Čilinská 1982, 349, Tab. III/29.); 23. Komárno–8. Shipyard grave No. 129 (Trugly 1993, 207, Abb. 29, Taf. XXXVI/4.); 24. Kótaj–Teleki birtok (Hampel 1902, 299–300;

Hampel 1905, II. 649–650, III. 428. t.; Csallány 1960, 41., xv. t. 3.); 25. Kölked–Feketekapu grave No. A-39 (Kiss 1996, 29, 228, Taf. 26/19.); grave No. A-375 (Kiss 1996, 103–104; Taf. 73/9.); grave No. A-394 (Kiss 1996, 110, Taf. 76/3.); grave No. A-480 (Kiss 1996, 129, Taf. 87/3.); A grave 'F' (Kiss 1996, 174, Taf. 105/10.); 26. Măgina grave No. 1 (Ciugudeanu 1974, 457–459, fig. 1/1.); 27. Pókaszeptk–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 64–65, 67, 137, Fig. 21, Pl. I/50, LXXXI/3.); grave No. 67 (Sós – Salamon 1995, 142, Pl. VII.); 28. Prigrevica Sv. Ivan (Roediger 1903a, 273; Hampel 1905 II. 843–844, fig. 1–5; Kovrig 1955b, 171; Dimitrijević – Kovačević – Vinski 1962, 54–55, Abb. 1; Mrkobrad 1980, 98, 152, T. LXXX/4.); 29. Proštea Mare (Horedt 1958, 101–102, fig. 17/12.); 30. Radvaň nad Dunajom–Virt grave No. 7 (Točík 1992, 27, Obr. 35/27.); grave No. 62 (Točík 1992, 40, obr. 42/3.); 31. Radvaň nad Dunajom–Žitavská Tůň grave No. 10/1956 (Budinský-Krička 1956, 16–20, Tab. XIX/21.); grave No. 14/1956 (Budinský-Krička 1956, 21–22, Tab. XX/16.); 32. Szegvár–Sáppoldal (Bóna 1979, 5, 3. kép 3.); 33. Szekszárd–Bogyiszlói út grave No. 126 (Rosner 1975–76, I. t. 7; Rosner 1999, 25, Taf. 10/2.); grave No. 246 (Rosner 1999, 37, Taf. 17/1.); grave No. 354 (Rosner 1999, 49, Taf. 25/14.); grave No. 551 (Rosner 1999, 72, Taf. 37/1.); grave No. 556 (Rosner 1999, 73, Taf. 37/5.); grave No. 598 (Rosner 1999, 76., Taf. 39/2.); grave No. 677 (Rosner 1999, 85, Taf. 45/5.); grave No. 698 (Rosner 1999, 87–88, Taf. 46/3.); grave No. 730 (Rosner 1999, 91, Taf. 48/25.); grave No. 754 (Rosner 1975–76, x. t. 11; Rosner 1999, 96, Taf. 50/3.); 34. Tiszaderzs–Szentimrei út grave No. 92 (Kovrig 1975, 223, Fig 10/2.); 35. Tiszafüred–Majoros grave No. 112 (Garam 1995, 20–21, Taf. 174.); grave No. 186 (Garam 1995, 29–30, Taf. 73, Taf. 174/8.); grave No. 207 (Garam 1995, 32, Abb. 13, Taf. 175.); grave No. 210 (Garam 1995, 32, Taf. 175.); grave No. 212 (Garam 1995, 32, Taf. 175.); grave No. 231 (Garam 1995, 36, Taf. 176.); grave No. 721 (Garam 1995, 91, Abb. 36, Taf. 183/1.); grave No. 937 (Garam 1995, 111, Abb. 43, Taf. 186/1.); grave No. 950 (Garam 1995, 112, Taf. 186.); grave No. 994 (Garam 1995, 117, Abb. 46, Taf. 137/1.); grave No. 1003 (Garam 1995, 118, Abb. 48, Taf. 187/1.); grave No. 1149 (Garam 1995, 135, Abb. 55, Taf. 190/1.); 36. Tiszavasvári–Koldusdomb grave No. 1 (Csallány 1960a, 51–55, XII–XVI. t.); grave No. 21 (Csallány 1960a, 58–59, xv. t. 2.); 37. Veszprém–Jutas grave No. 121 (Rhé – Fettich 1931, 26, IV. 11; Kovrig 1955b, 169.); grave No. 173 (Rhé – Fettich 1931, 31, IV/30.)

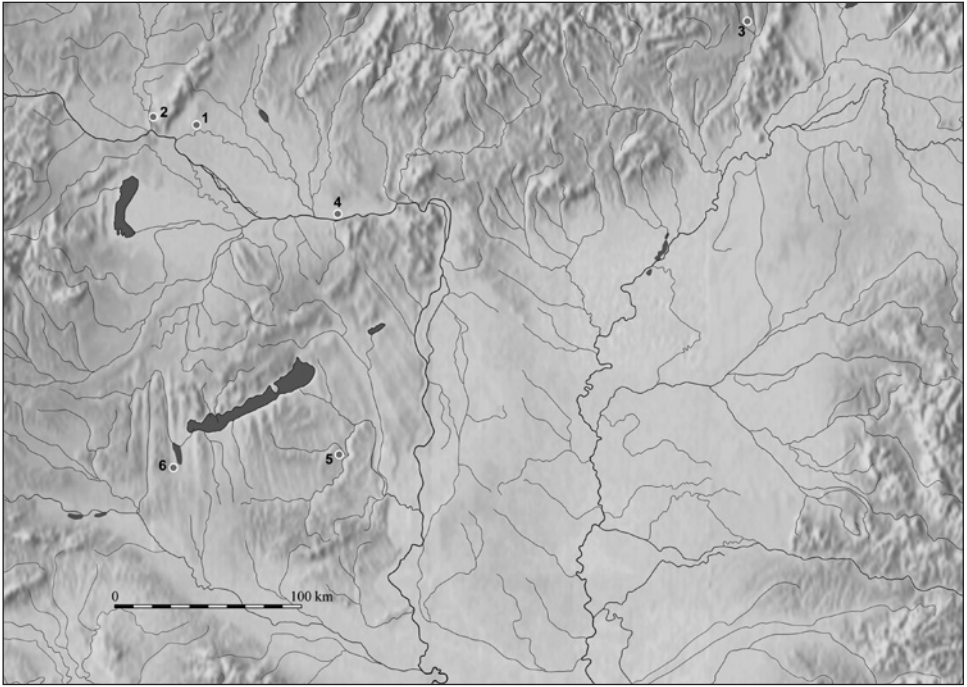


MAP 9 *Broad reed-shaped with bent edges (P.I.C)*  
 1. Budakalász–Dunapart grave No. 529, 832, 1077, 1235; 2. Dávod–Réaltjai szőlők, Vágner A. szőlője, stray find (Gubitz 1908, 419–420, 8. kép.)



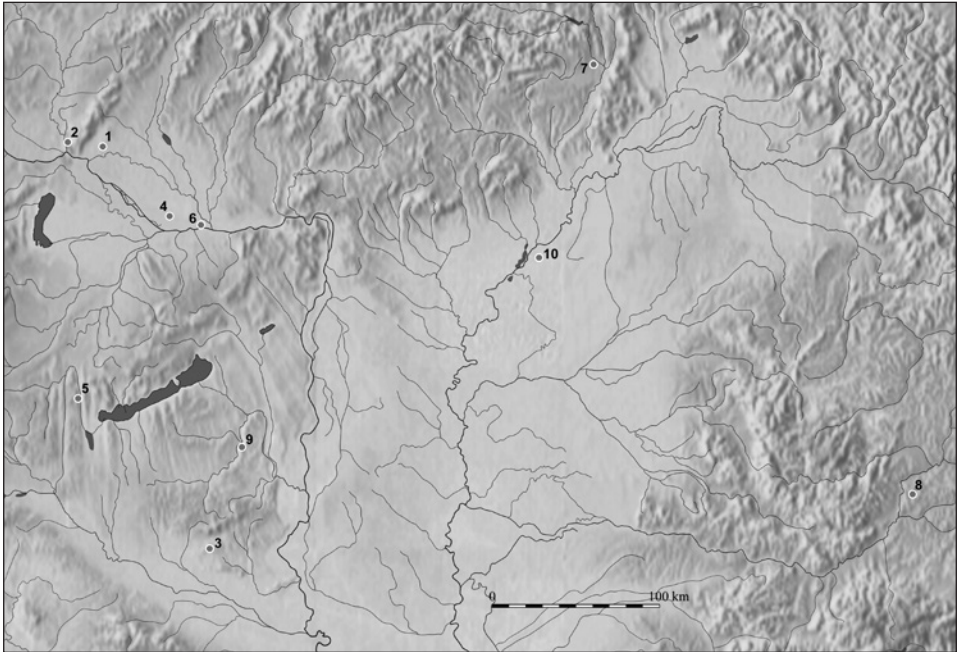
MAP 10 *Reed-shaped blade with broad shoulder (P.I.D)*  
 1. Devínska Nová Ves grave No. 107 and stray find (Eisner 1952, 36, Obr. 28/5.; t. 108/n.);  
 2. Košice–Šebastovce grave No. 226 and 374 (Budinský-Krička – Točík 1991, 48, Taf. xxx/8.; 72; Taf. XLVIII/2.); 3. Valalíky–Všechsvätých grave No. 22 (Pástor 1961, 377–378, 361, Obr. 152/1.)





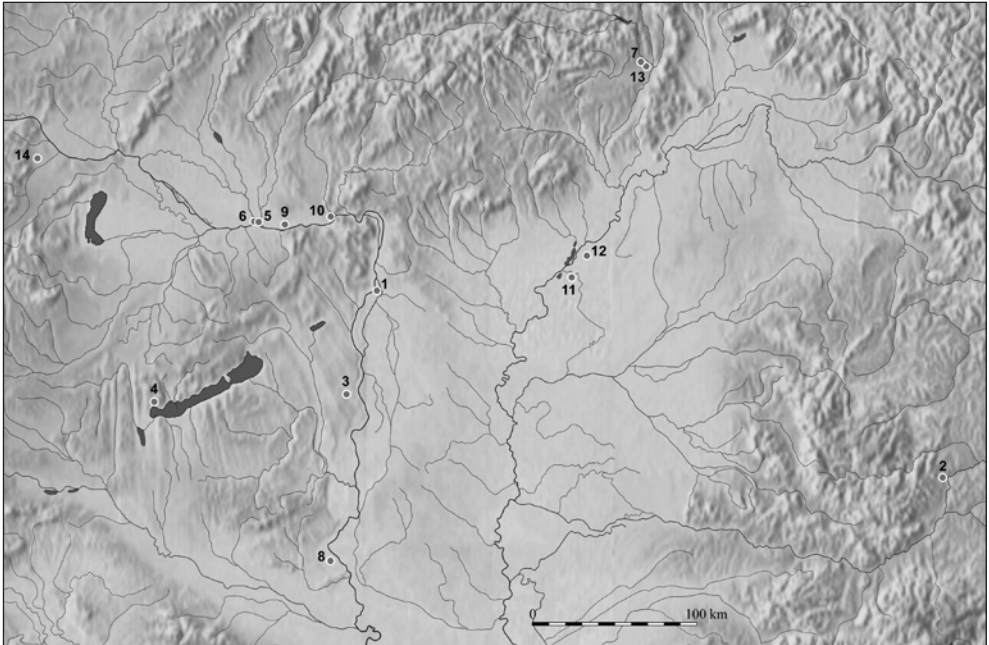
MAP 11 *Spearheads with pentagonal blades (P.I.E)*

1. Bernolákovo–Sakoň grave No. 23 (*Kraskovská 1962, 430., tab. v/6.*);
2. Devínska Nová Ves–A-Tehelňa grave No. 565 (*Eisner 1952, 127, t. 73/5.*);
3. Košice–Šebastovce grave No. 293 (*Budínský-Krička – Točík 1991, 61, Taf. XLII/5.*);
4. Radvaň nad Dunajom–Žitavská Tňň grave No. 26/1956 (*Budínský-Krička 1956, 27–28, Tab. XXIV/n.*);
- grave No. 1 (*Čilinská 1963, 88, tab. II/29.*);
5. Regöly–Kupavár grave No. 18 (*Kiss – Somogyi 1984, 130, 58. tábla 18.*);
6. Zalakomár–Lesvári-dűlő grave No. 545A (*Szőke 2002, 77, 8/e.*)



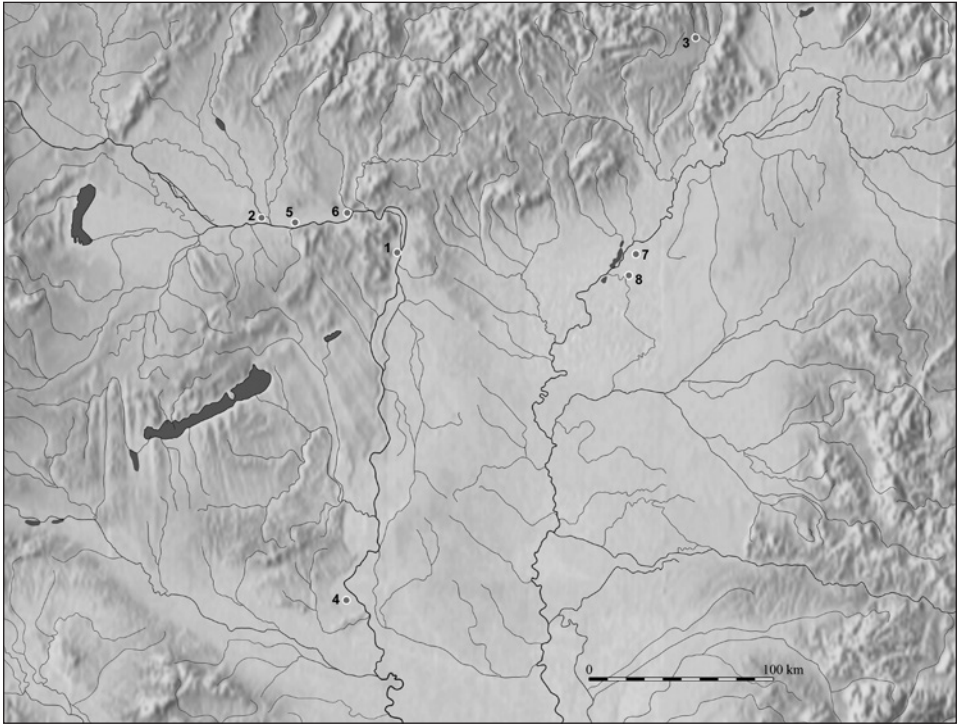
MAP 12 *Narrow reed-shaped spearheads of quadrangular cross section (P.I.F)*

1. Bernolákovo grave No. 34 (Kraskovská 1962, 433, tab. VII/19.); 2. Devínska Nová Ves–Tehelňa grave No. 401 (Eisner 1952, 91–92, Obr. 45/9.); grave No. 815 (Eisner 1952, 174, t. 96/2.); 3. Győd–Máriahegy grave No. 38 (Kiss 1977, 40, Pl. VII.); 4. Holiare grave No. 551 (Točík 1968a, 85, Taf. LXXII/7.); 5. Kehida–TSz-major grave No. 20 (Szóke 2002, 77, 8/g.); 6. Komárno–8. Shipyard grave No. 30 (Trugly 1987, 256., Abb. 3.; Taf. V/2.); Komárno–8 Shipyard grave No. 72 (Trugly 1987, 265–266, Taf. XVI–XVII., Taf. XVII/3.); grave No. 85 (Trugly 1987, 271–272, Taf. XXVI–XXVIII., Taf. XXVI/13.); 7. Košice–Šebastovce grave No. 80 (Budinský-Krička – Točík 1991, 21–22, Taf. IX/6.); grave No. 86 (Budinský-Krička – Točík 1991, 23–24, Taf. XI/48.); grave No. 96 (Budinský-Krička – Točík 1991, 27, Taf. XIV/1.); grave No. 99 (Budinský-Krička – Točík 1991, 27–28, Taf. XV/9.); 8. Lopadea Noua (Horedt 1958, 101, fig. 18/5.); 9. Szárazd (Kovács 2001, 185, 206, 10. kép 4.); 10. Tiszafüred–Majoros grave No. 159 (Garam 1995, 26, Taf. 174.); grave No. 234 (Garam 1995, 36, Abb. 14, Taf. 176.); grave No. 313 (Garam 1995, 44, Taf. 82, Taf. 177.); grave No. 365 (Garam 1995, 50–52, Abb. 21, Taf. 177.); grave No. 447 (Garam 1995, 60, Taf. 179.); grave No. 663 (Garam 1995, 85, Taf. 182.); grave No. 945 (Garam 1995, 112, Taf. 134, Taf. 186/1.); grave No. 1069 (Garam 1995, 126, Taf. 145, Taf. 187/1.)



MAP 13 *Regular conical spearheads*

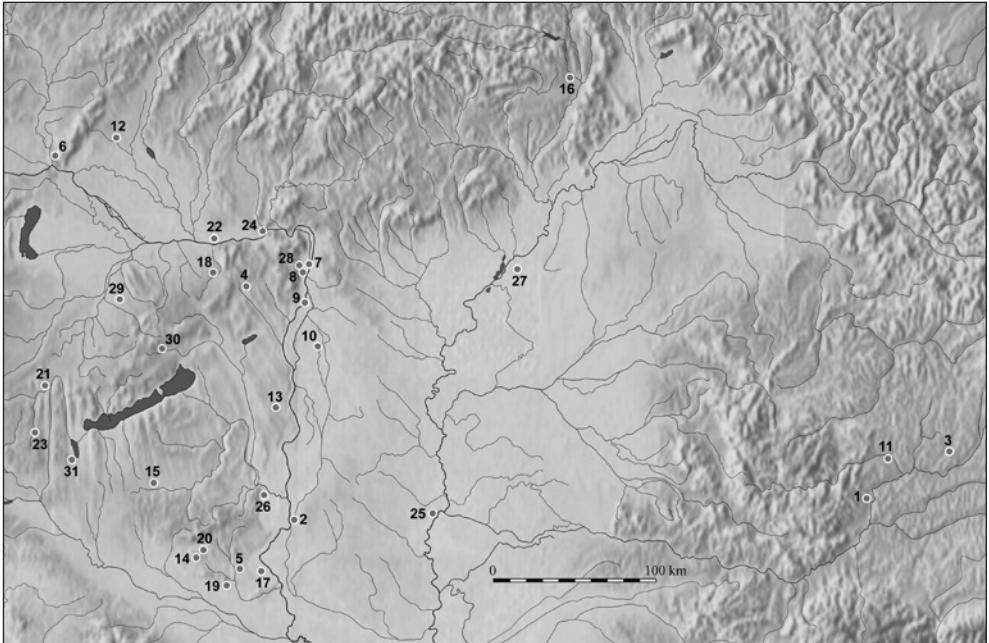
1. Budapest XXI. Csepel–Háros grave No. 47 (Nagy 1998, I. 158–159; II. Taf. 109/3.); grave No. 52 (Nagy 1998, 160–161. II. Taf. 110/24.);
2. Csicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270, Fig 4/3.);
3. Előszállás–Bajcsihegy grave No. 20 (Kovrig 1955b, 169.);
4. Gyenesdiás grave No. 5 (Heinrich–Tamáska 2005, 156, Abb. 1b/16.);
5. Komárno–3. Váradiho u. grave No. 2 (Čilinská 1982, 347, Tab. II/1.); grave No. 16 (Čilinská 1982, 352. tab. VII/12.);
6. Komárno–8. Shipyard grave No. 118 (Trugly 1993, 201, Taf. XXIV/5.);
7. Košice–Šebastovce grave No. 254 (Budinský–Krička – Točík 1991, 55–56, Taf. XXXVII/16.); grave No. 417 (Budinský–Krička – Točík 1991, 80–81; Taf. LIV/3.);
8. Kölked–Feketekapu A grave No. 253 (Kiss 1996, 74, Taf. 55/2.);
9. Radvaň nad Dunajom–Virt grave No. 19 (Točík 1992, 30, obr. 37/5.); stray find (Točík 1992, Obr. 48/12.);
10. Štúrovo–Vojenské cvičisko grave No. 138 (Točík 1968b, 41–42, Taf. xxxi11/19.); grave No. 157 (Točík 1968b, 45, Taf. xxxv/29.);
11. Tiszaderzs–Szentimrei út grave No. 88 (Kovrig 1975, 223, Fig. 10/5.);
12. Tiszafüred–Majoros grave No. 46 (Garam 1995, 13–16, Abb. 5; Taf. 62, Taf. 173/1.); grave No. 113 (Garam 1995, 21, Abb. 8, Taf. 66, 174/1.); grave No. 183 (Garam 1995, 28, Taf. 174.); grave No. 199 (Garam 1995, 31–32, Abb. 199, Taf. 74, Taf. 175/1.); grave No. 330 (Garam 1995, 47, Abb. 20, Taf. 84, Taf. 177/1.); grave No. 507 (Garam 1995, 68, Abb. 28, Taf. 98, Taf. 180/1.); grave No. 536/a (Garam 1995, 71, Taf. 100, Taf. 190/1.); grave No. 561 (Garam 1995, 75, Taf. 102, Taf. 181/1.); grave No. 592 (Garam 1995, 78, Taf. 105, Taf. 182/1.); grave No. 685 (Garam 1995, 86, Abb. 35, Taf. 112, Taf. 182/1.); grave No. 783 (Garam 1995, 96, Abb. 38, Taf. 120, Taf. 183/1.); grave No. 902 (Garam 1995, 108, Taf. 130, Taf. 185/1.); grave No. 968 (Garam 1995, 114, Abb. 45, Taf. 136.); grave No. 1159 (Garam 1995, 137, Taf. 155.);
13. Valalíky–Všechsvätých grave No. 84 (Pástor 1982, 315.);
14. Vösendorf grave No. 32 (Sauer 2007, 92.)



MAP 14 *Spearheads with needle-shaped blades of quadrangular cross section*

1. Budakalász-Dunapart grave No. 85 (MTA RI 97.1.22.14);
2. Komárno-8. Shipyard grave No. 87 (Trugly 1987, 272, Taf. xxx/5.); grave No. 101 (Trugly 1993, 194., Abb. 8, Taf. v/7.); grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/9.);
3. Košice-Šebastovce grave No. 161 (Budinský-Krička – Točík 1991, 38, Taf. xx11/15.);
4. Kölked-Feketekapu A grave No. 422 (Kiss 1996, 116, Taf. 79/7.);
5. Radvaň nad Dunajom-Žitavská Tõň grave No. 24/1956 (Budinský-Krička 1956, 25–26, Tab. xx111/17.); grave No. 6 (Čilinská 1963, 89–90, tab. 1v/22.);
6. Štúrovo-Vojenské cvičisko grave No. 5 (Točík 1968b, 11, Taf. xv/31.);
7. Tiszafüred-Majoros grave No. 456 (Garam 1995, 60, Abb. 26, Taf. 92, Taf. 179.); grave No. 716 (Garam 1995, 90, Abb. 37, Taf. 114, Taf. 186/1.); grave No. 1142 (Garam 1995, 134–135, Taf. 153, Taf. 188.); grave No. 1194 (Garam 1995, 140–141, Taf. 158, Taf. 188/1.);
8. Tiszaszentimre-Református templom (Kovrig 1955b, 174; Madaras 1995a, No. 86.)

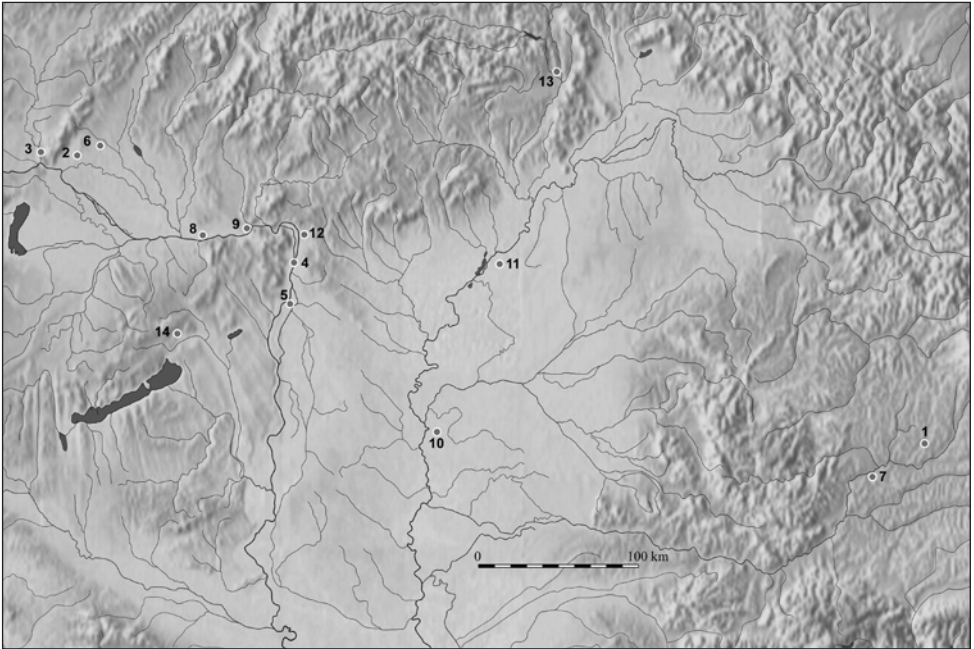




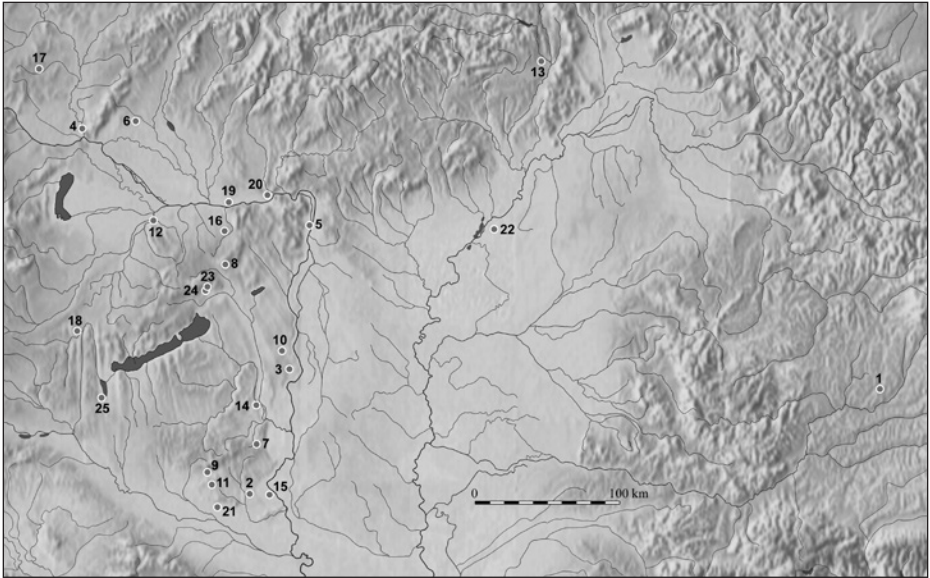
MAP 15 *Broad lenticular spearheads with long blade (P.III.A/1)*

1. Aiudul de Sus (Horedt 1958, 93, fig. 17/2.); 2. Baja–Allaga szőlő (Roediger 1903a, 144–145; Roediger 1903b, 272–276; Hampel 1905, 11. 840–842.); 3. Band grave No. 179 (Kovács 1913, 362, 81. kép); 4. Bicske–Óbarok (Fülöp 1984a, 257–258, 7. ábra); 5. Bóly–Sziebert puszta–A grave No. 8 (Papp 1962, 172, VI. t. 15.); 6. Devinska Nová Ves–A–Tehel'ňa grave No. 559 (Eisner 1952, 126.); grave No. 597 (Eisner 1952, 132–133, t. 72/1.); 7. Budakalász–Dunapart grave No. 341, 432, 437, 540, 670, 680, 778, 1003, 1472; 8. Budapest III. Szentendrei út (Nagy 1998, 33. II. Taf. 37/14.); 9. Budapest XXI. Csepel–Háros grave No. 25 (Nagy 1998, 151, Taf. 104/14.); 10. Bugyi–Úrbőpuszta grave No. 8 (Kovrig 1955b, 171; Bóna 1957, 157, XXXI/1. tábla); grave No. 21 (Bóna 1957, 158, XLIII/17. tábla); 11. Câmpia Turzii (Horedt 1958, 94–95, fig. 11/4.); 12. Cífer–Pác I. Nad mlynom I. grave No. 85 (Zábojník 1995, No. 15; Fusek 2006, 31–32; 40. Tab. III/1.); 13. Előszállás–Bajcsihegy grave No. 142 (IKM 53.271); 14. Győd–Máriahegy grave No. 30 (Kiss 1977, 30, Pl. v.); grave No. 59 (Kiss 1977, 41, Pl. VIII/7.); grave No. 67 (Kiss 1977, 41, Pl. IX.); 15. Kaposvár–Toponár–40. számú őrház grave No. 57 (58) (Bárdos 1978a, 21, 28, 62–63.); 16. Košice–Šebastovce grave No. 238 (Budinský–Krička – Točík 1991, 52–53, Taf. XXXIV/1.); 17. Kölked–Feketekapu grave No. A-65 (Kiss 1996, 33, Taf. 29/4.); grave No. A-142 (Kiss 1996, 51–52, Taf. 41/12.); grave No. A-257 (Kiss 1996, 75, Taf. 56/13.); grave No. A-259 (Kiss 1996, 75–76, Taf. 57/19.); grave No. A-260 (Kiss 1996, 76, Taf. 57/20.); grave No. A-289 (Kiss 1996, 84, Taf. 63/6.); grave No. A-386 (Kiss 1996, 106, Taf. 75/10.); grave No. A-392 (Kiss 1996, 108–109, Taf. 76/20.); grave No. A-405 (Kiss 1996, 113, Taf. 78/6.); grave No. A-406 (Kiss 1996, 114, Taf. 78/8.); grave No. A-471 (Kiss 1996, 127, Taf. 83/48.); grave No. A-474 (Kiss 1996, 127–128, Taf. 86/3.); grave No. B-80 (Kiss 2001, 25–26, Taf. 24–27, Taf. 26/2.); grave No. B-135 (Kiss 2001, 67–68, Taf. 40–42, Taf. 42/2.); grave No. B-443 (Kiss 2001, 141–142, Taf. 82/4.); 18. Környe grave No. 104 (Salamon – Erdélyi 1971, 24, Taf. 18/17.); 19. Nagyharsány–Szarkás-dűlő grave No. 64 (Papp 1963, 133, VIII. t. 14.);

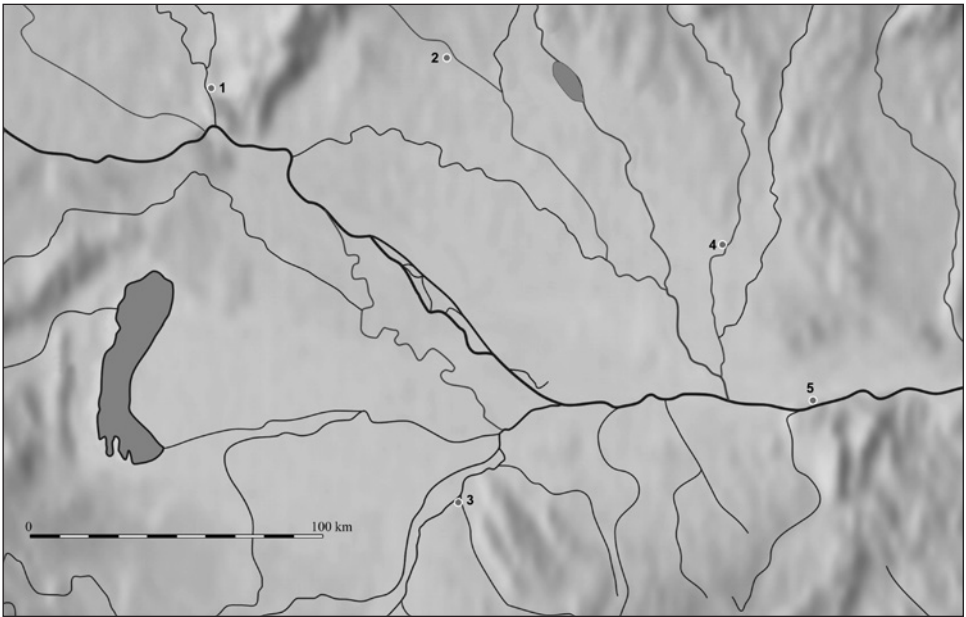
20. Pécs–Köztemető grave No. 4 (Kiss 1977, 92, Pl. xxxiv/1.); grave No. 10 (Kiss 1977, 94, xxxiv.); grave No. 30 (Kiss 1977, 94–96, Pl. xxxvii/6–7.); 21. Pókaszeptek–Mesterföldek, Avar utca grave No. 12 (Sós – Salamon 1995, 64–65, 67, 69, 137, Pl I/1, Pl. LXXXIII/5.); grave No. 35 (Sós – Salamon 1995, 64–65, 67, 69, 140, Pl. IV/1, Pl. LXXXIV/3.); grave No. 42 (Sós – Salamon 1995, 64–65, 67, 69, 140, Pl. V/7, LXXXIII/3.); grave No. 47 (Sós – Salamon 1995, 141, Pl. VI.); grave No. 117 (Sós – Salamon 1995, 148, Pl. XII.); grave No. 121 (Sós – Salamon 1995, 149, Pl. XIII/1, Pl. LXXXIV/2.); grave No. 180 (Sós – Salamon 1995, 64–65, 67, 69, 154, Pl. XVI/2, Pl. LXXXIII/4.); 22. Radvaň nad Dunajom–Virt grave No. 47 (Točík 1992, 36–37, obr. 40/8.); grave No. 99 (Točík 1992, 47, Obr. 45/17.); 23. Söjtör–Petőfi utca grave No. 16 (Szóke 1994a, 10. t. 2; Szóke 2002, 81, 6.); grave No. 24 (Szóke 1994a, 10, t. 6.); 24. Štúrovo–Vojenské cvišisko grave No. 38 (Točík 1968b, 20–21, Taf. xx/20.); 25. Szeged–Kundomb grave No. 293 (Salamon – Sebestyén 1995, 37–38, 55, Pl. 36/9.); 26. Szekszárd–Bogyiszlói út grave No. 111 (Rosner 1999, 23, Taf. 9/1.); grave No. 356 (Rosner 1999, 51, Taf. 26/9.); grave No. 478 (Rosner 1999, 65, Taf. 33/5.); grave No. 557 (Rosner 1999, 73, Taf. 38/1.); 27. Tiszafüred–Majoros grave No. 171 (Garam 1995, 26, Abb. 10, Taf. 174/1.); grave No. 175 (Garam 1995, Abb. 10, 28, Taf. 174/1.); grave No. 350 (Garam 1995, 49–50, Abb. 20, Taf. 177.); grave No. 352 (Garam 1995, 50, Abb. 21, Taf. 85, Taf. 177/1.); grave No. 433 (Garam 1995, 59, Abb. 24, Taf. 178.); grave No. 474 (Garam 1995, 64, Taf. 94, Taf. 179/1.); grave No. 553 (Garam 1995, 74, Taf. 180.); grave No. 706 (Garam 1995, 90, Taf. 113, Taf. 182.); grave No. 709 (Garam 1995, 90, Taf. 114, Taf. 182/1.); grave No. 845 (Garam 1995, 102, Taf. 126, Taf. 184/1.); grave No. 1246 (Garam 1995, 150, Abb. 62, Taf. 166, Taf. 189/1.); 28. Üröm stray find (MNM 71/1906.2); 29. Vaszar–Tóré I. (MRT 4. 1972, 255, 75. t. 13.); 30. Veszprém–Jutas grave No. 110 (Rhé – Fettich 1931, 24, IV. t. 33.); 31. Zalakomár–Lesvári-dűlő grave No. 545B (Szóke 2002, 77. 8/a.)



MAP 16 *Spearheads of broad lenticular blades which is shorter than their socket (P.III.A/2)*  
 1. Band grave No. 115 (Kovács 1913, 341, 63. kép); 2. Bernolákovo–Sakoň grave No. 53 (Kraskovská 1962, 436–437, tab. XI/1.); 3. Devínska Nová Ves–A-Tehel'ňa grave No. 95 (Eisner 1952, 30–31, Obr. 28/1); 4. Budakalász–Dunapart grave No. 245; 5. Budapest XXI. Csepel–Háros grave No. 73 (Nagy 1998, 169, Taf. 14/14.); 6. Čataj I. Zemanské–Gejzovce grave No. 145 (Hanuliak – Zábójník 1982, 498; Szentpéteri 1993, 121.); 7. Nošlac grave No. 16 (Rusu 1962, Fig. 4/11.); 8. Radvaň nad Dunajom–Žitavská Tôň grave No. 33 (Čilinská 1963, 95–96, tab. x/35.); 9. Štúrovo–Vojenské cvišisko grave No. 154 (Točík 1968b, 44–45, Taf. XXXIV/23.); 10. Szentes–Nagyhegy grave No. 31 (Csallány 1956a, 923–925.); 11. Tiszafüred–Majoros grave No. 451 (Garam 1995, 60; Abb. 25; Taf. 92, Taf. 179/1.); grave No. 757 (Garam 1995, 94, Taf. 117.); grave No. 831 (Garam 1995, 101, Taf. 125, Taf. 183/1.); grave No. 1009/a (Garam 1995, 120, Abb. 48, Taf. 140, Taf. 187.); 12. Vác–Kavicsbánya grave No. 189 (Tettamanti 2000, 42–43, Taf. 9/3.); 13. Valal'ky–Všechsvätých grave No. 44/83 (Béreš 1984, 40; Zábójník 1995, Taf. 111.); 14. Várpalota–Gimnázium grave No. 218 (Erdélyi – Németh 1969, 192, XXIII. t. 4.)



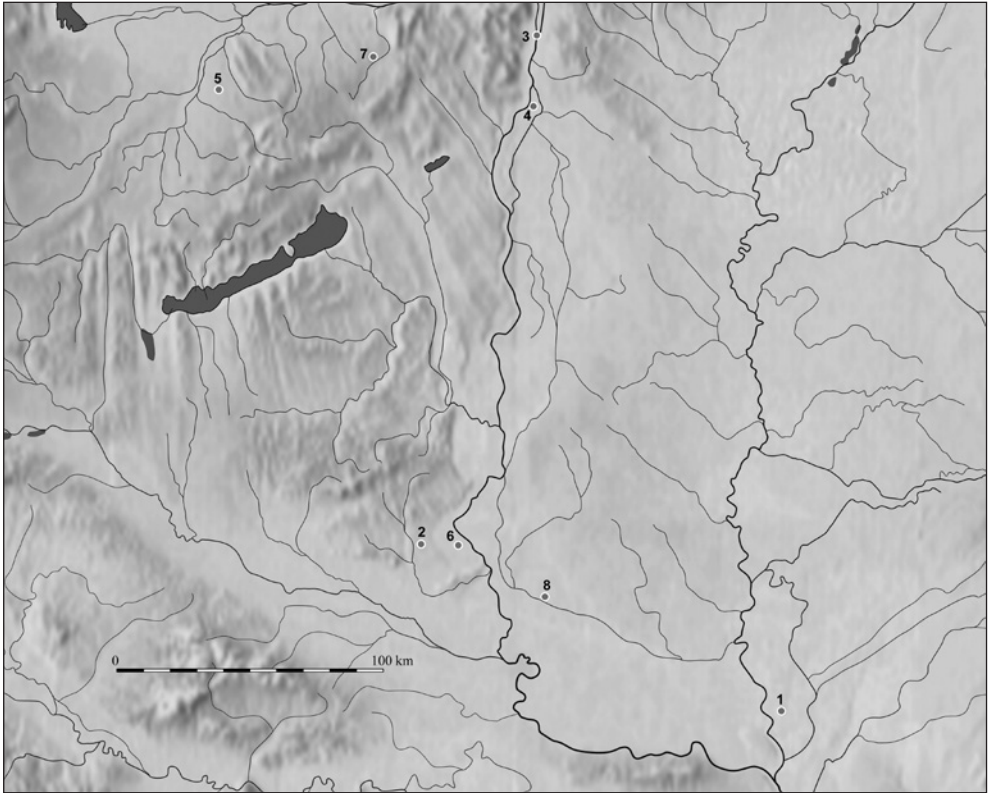
MAP 17 *Spearheads of narrow lenticular blades which is longer than their socket (P.III.B/1)*  
 1. Band grave No. 52 (Kovács 1913, 324–325, 43. kép 15.); 2. Bóly–Sziebert puszta–A grave No. 1 (Papp 1962, 168–169; III. t. 16.); 3. Bölcske–Kömlődi út grave No. 14 (Szelle 1891, 242. 2/10 kép; Kovrig 1955b, 167.); 4. Bratislava–Devínska Nová Ves–A–Tehel'ňa grave No. 765a (Eisner 1952, 161–162, t. 81/8.); 5. Budakalász–Dunapart grave No. 223, 260, 480, 1024, 1096, 1271; 6. Čataj I. Zemanské–Gejzovce grave No. 113 (Hanuliak – Zábójník 1982, 498; Szentpéteri 1993, 121.); 7. Cíko grave No. 552 (Wosinsky 1896, 963., CCXXXVI. tábla; Kiss – Somogyi 1984, 65, 38. tábla 27.); grave No. 555 (= B) (Kovrig 1955a, 34, Kovrig 1955b, 167–168, Kiss – Somogyi 1984, 66, 80, 243, 41. tábla 21–22.); 8. Csákberény–Orondpuszta grave No. 44 (IKM 10.217) (3 examples); grave No. 84 (IKM 10.244) (2 examples); grave No. 89B (IKM 10.249); 9. Cserkút–Szlólk stray find (Kiss 1977, 18.) (2 examples); 10. Előszállás–Bajcsihegy grave No. 200 (IKM 53.75.1); 11. Gyód–Máriahegy grave No. 34 (Kiss 1977, 30, Pl. VI.); 12. Győr–Ménfőcsanak–Bevásárló (Metro) grave No. 522; 13. Košice–Šebastovce grave No. 131 (Budinský–Krička – Točík 1991, 32–33, Taf. xviii/28.); grave No. 232 (Budinský–Krička – Točík 1991, 50–51, Taf. xxxii/6.); grave No. 292 (Budinský–Krička – Točík 1991, 60–61, Taf. xli/32.); 14. Kölesd (Kovrig 1955b, 170.); 15. Kölked–Feketekapu A grave No. 275 (Kiss 1996, 80, Taf. 60/10.); 16. Környe stray find (Salamon – Erdélyi 1971, 30, Taf. 29/2.); 17. Mistelbach–Krankenhaus grave 'A' (Mitschamähreim 1941, 7. Taf. 1/15; Distelberger 1996, 105–109.); 18. Pókaszeptek–Mesterföldek, Avar utca grave No. 76 (Sós – Salamon 1995, 143, Pl. IX.) (2 examples); grave No. 88 (Sós – Salamon 1995, 145, Pl. X.) (3 examples); grave No. 132 (Sós – Salamon 1995, 64–65, 67, 69, 150, Pl. xiv/4, Pl. LXXXIII/2.); grave No. 171 (Sós – Salamon 1995, 153, Pl. XIV.); grave No. 179 (Sós – Salamon 1995, 154, Pl. xv.); grave No. 360 (Sós – Salamon 1995, 172, Pl. xxii.) (2 examples); 19. Radvaň nad Dunajom–Žitavská Tňň grave No. 3 (Čilinská 1963, 89, tab. III/18.); 20. Štúrovo–Vojenské cvičisko grave No. 258 (Točík 1968b, 67–68, Taf. LI/14.); 21. Terehegy–Márfai döngút grave No. 6 (Kiss 1977, 147–148, Pl. LX.); 22. Tiszafüred–Majoros grave No. 577 (Garam 1995, 76, Abb. 31, Taf. 104, Taf. 181/1.); grave No. 692 (Garam 1995, 88, Abb. 35, Taf. 182/1.); 23. Várpalota–Gimnázium grave No. 210 (Erdélyi – Németh 1969, 190, xx. tábla 6–7.) (2 examples); 24. Várpalota–Unio–Homokbánya grave No. 12 (Bóna 2000b, Taf. 11/1a-b.129–130.); 25. Zalakomár–Lesvári-dűlő grave No. 560 (Szóke 2002, 75, 5.)



MAP 18 *Narrow lenticular spearheads with rhombic cross section (P.III. c)*

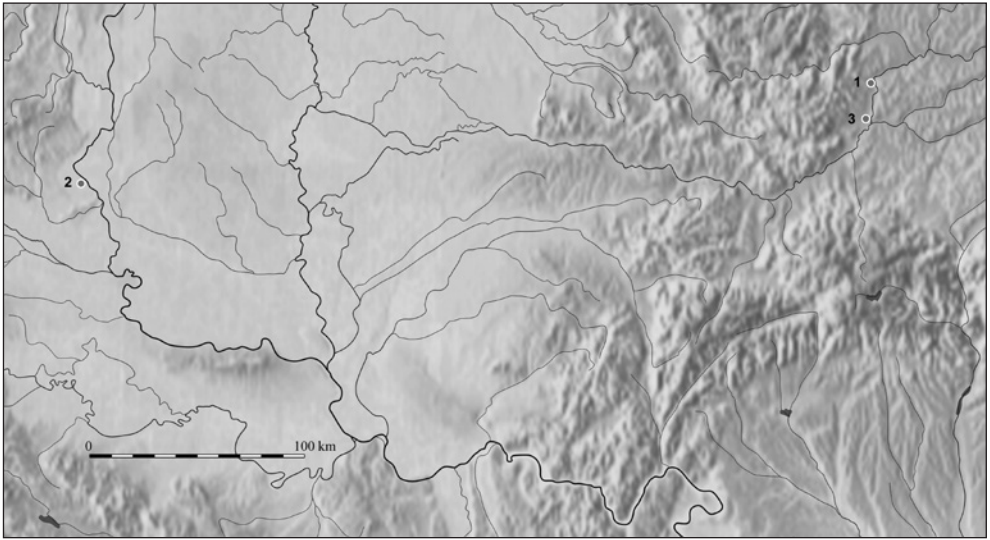
1. Bratislava-Devínska Nová Ves-A Tehel'ňa grave No. 422 (Eisner 1952, 97, t. 40/8.); grave No. 453 (Eisner 1952, 103, t. 50/1.); grave No. 616 (Eisner 1952, 137, t. 65/8.); grave No. 777 (Eisner 1952, 163, t. 84/6.); 2. Čataj I. Zemanské-Gejzovce grave No. 77 (Hanuliak - Zábajník 1982, 498.); grave No. 176 (Hanuliak - Zábajník 1982, 498; Szentpéteri 1993, 121.); 3. Koroncó, stray find (XJM 53.310.1); 4. Nové Zámky I. Belohorského Záhrada grave No. 369 (Čilinská 1966, 72-73, Taf. LVII/26.); 5. Radvaň nad Dunajom-Žitavská Tň grave No. 11 (Čilinská 1963, 91, tab. VI/12.)





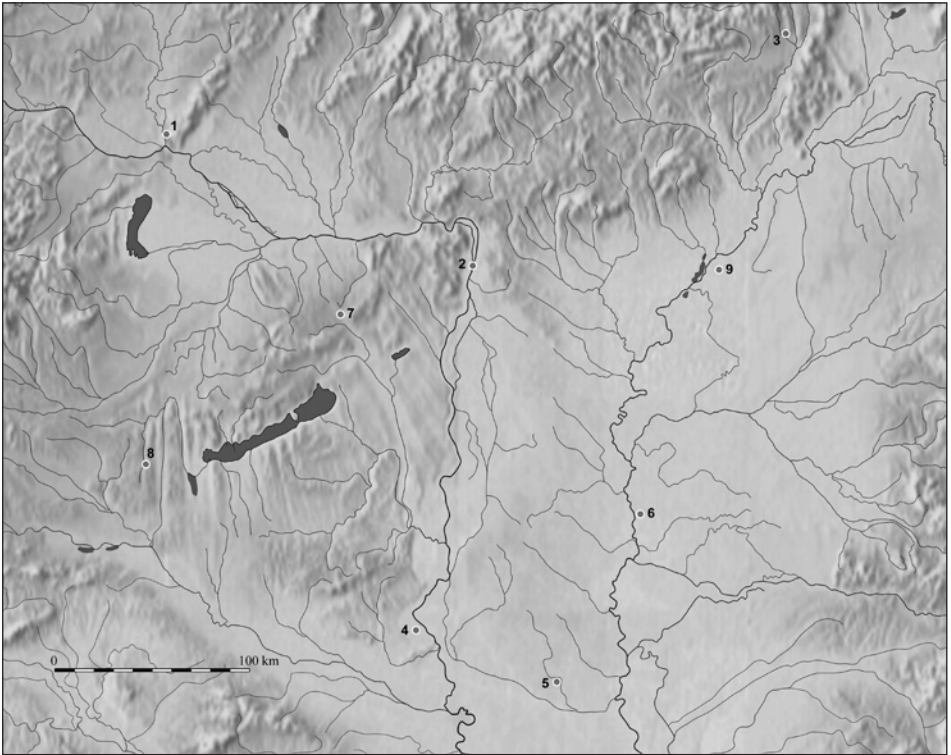
MAP 19 *Lenticular spearheads with a central rib (Dorfmerking-type) P.III.D*

1. Aradac–Mečka grave No. 72 (Nadi959, 61, 85. tab xviii/13; Dimitrijević – Kovačević – Vinski 1962, 9–12.); 2. Bóly–Sziebert puszta A grave No. 59 (Papp 1962, 179–180, XII.1., xv.t. 7.); 3. Budakalász–Dunapart grave No. 1474; 4. Budapest XXI. Csepel–Háros grave No. 5 (Nagy 1998, 148, Taf. 100/1.); 5. Gyarmat–Királydomb (MRT 4. 1972, 112, 25. t. 1–5.); 6. Kölked–Feketekapu grave No. A-250 (Kiss 1996, 73, 233, 234, 418, Taf. 4/3, 469, Taf. 55/17.); 7. Környe grave No. 125 (Salamon – Erdélyi 1971, 26, Taf. 21/9.); stray find (MNM 69.1.487); stray find (Salamon – Erdélyi 1971, 30, 56, 106, Taf. 28/5, 135, Taf. xviii/7.); stray find (MNM 69.1.66); 8. Sombor–Kukula téglagyár (Gubitza 1909, 24; Csallány 1956, 1085, Dimitrijević – Kovačević – Vinski 1962, 59; Mrkobrad 1980, 152.)



MAP 20 *Openwork spearheads (P.III.E)*

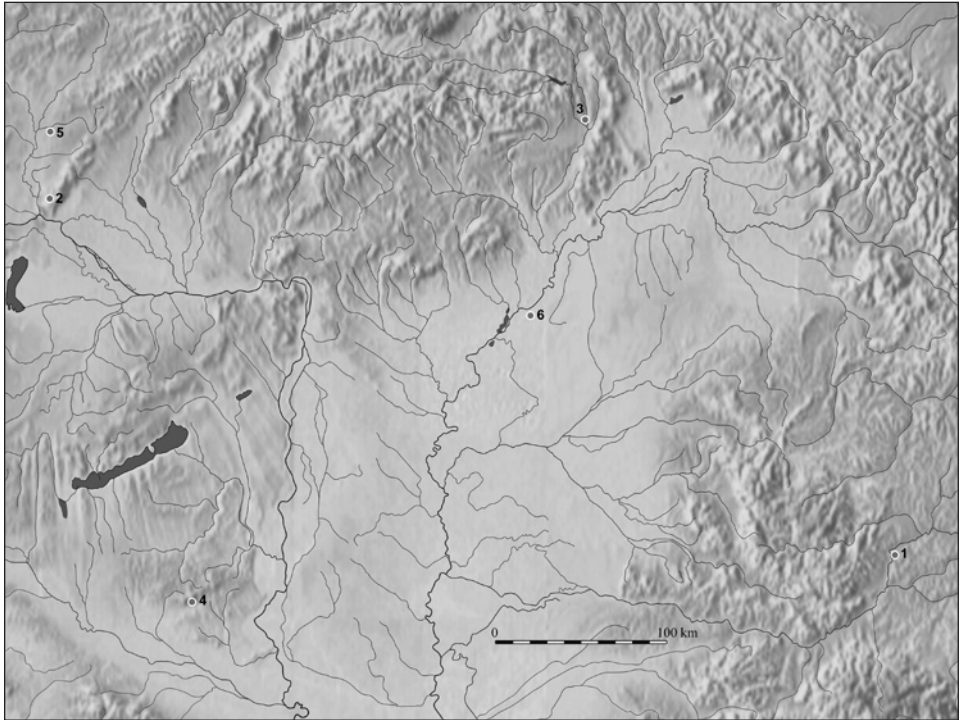
1. *Gâmbaş*, stray find (Horedt 1958, 96, fig.9a/10–11.) 2 examples; grave No. 1X (Horedt 1958, 99, fig. 14/2, 13.); 2. *Kölked–Feketekapu* grave No. B-82 (Kiss 2001, 28, II. 42, Taf. 28, 9.); 3. *Teiuş* grave No. III (Horedt 1958, 104, Fig. 17/13.)



MAP 21 *Spearheads with narrow triangular blade (p.IV.A)*

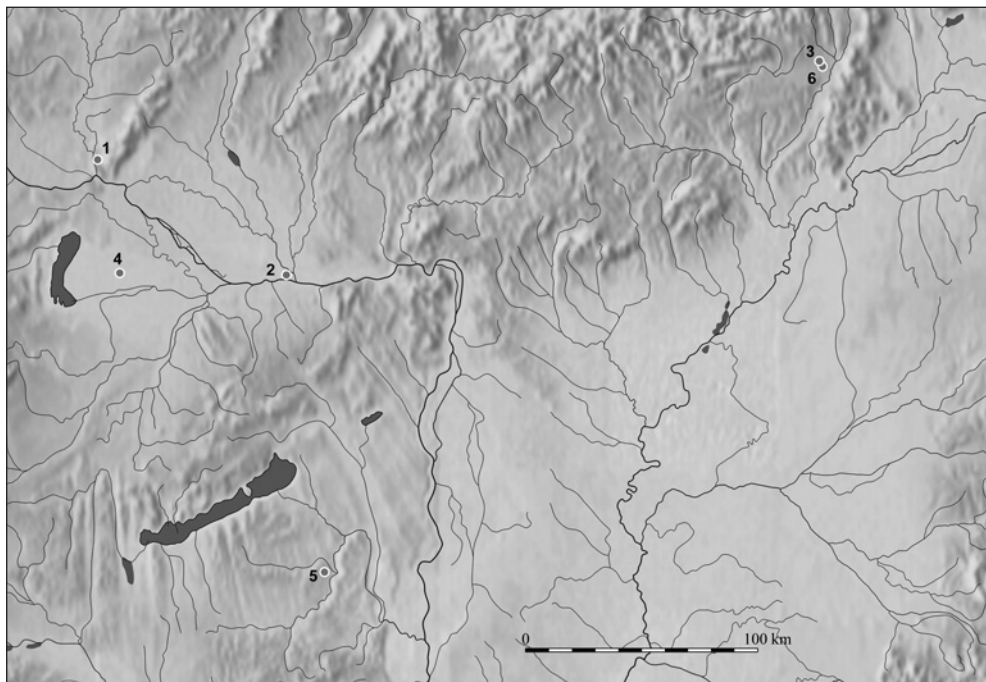
1. Bratislava–Devínska Nová Ves–A–Tehelňa grave No. 524 (Eisner 1952, 119–120, Obr. 71/1, Obr. 52–54.); grave No. 842 (Eisner 1952, 182, Obr. 89/8); 2. Budakalász–Dunapart grave No. 452; 3. Košice–Šebastovce grave No. 67 (Budinský–Krička – Točík 1991, 18–19, Taf. VI/21.); grave No. 94 (Budinský–Krička – Točík 1984, 174, 176, Obr. 2/4; Budinský–Krička – Točík 1991, 25–26, Taf. XII/7.); grave No. 225 (Budinský–Krička – Točík 1991, 47–48., Taf. XXIX–XXX; Taf. XXX/11.); 4. Kölked–Feketekapu grave No. A-211 (Kiss 1996, 64–65, Taf. 49/17.); 5. Mali Idoš grave No. 70 (Gubitza 1907, 357–358; Kovrig 1955b, 169; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 98, 152, LXXX/1, 13.); 6. Mártély–Ómártély grave No. B (Hampel 1905, II, 107–108; III, Taf. 85/15.); 7. Mór–Akasztódomb (Török 1954, 57, XII, tábla 26.); 8. Söjtör–Petőfi utca grave No. 12 (Szóke 1994a, 10, tábla 1.); 9. Tiszafüred–Majoros grave No. 272 (Garam 1995, Abb. 16, Taf. 79, Taf. 177/1.); grave No. 809 (Garam 1995, 99, Taf. 184.); grave No. 1197 (Garam 1995, 142, Abb. 57, Taf. 159, Taf. 188/1.)





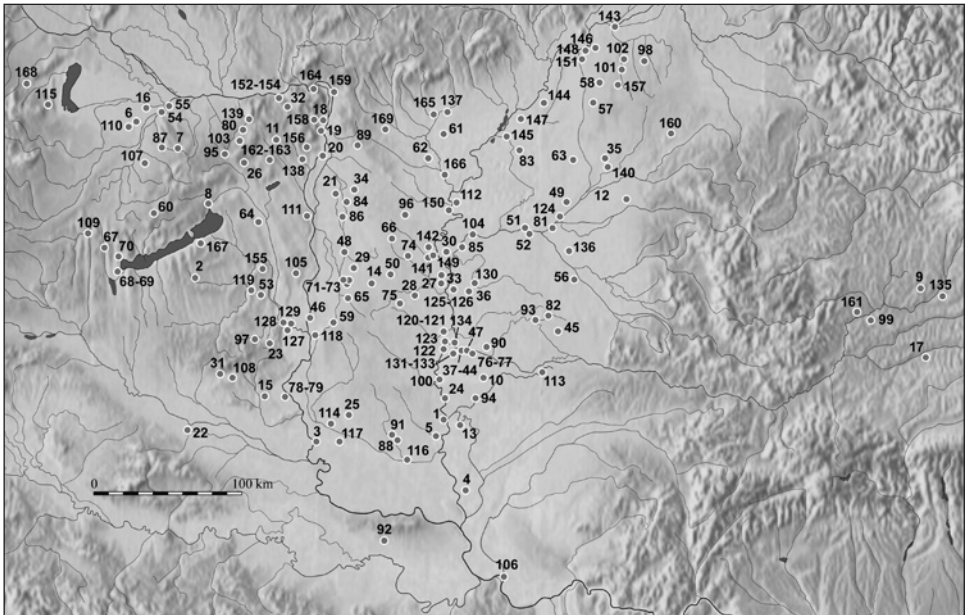
MAP 22 *Spearheads with broad triangular blade (P.IV.B)*

1. Aiud grave No. 111 (Horedt 1956, 396; Horedt 1958, 92, fig. 10/2, 15); 2. Bratislava–Devínska Nová Ves–A-Tehel'ňa grave No. 416 (Eisner 1952, 95–96, Obr. 47/5–6.);
3. Košice–Šebastovce grave No. 48 (Budinský-Krička – Točík 1991, 14–15, Taf. 11/1.); grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. xxvii–xxix.); grave No. 228 (Budinský-Krička – Točík 1991, 48–49, Taf. xxx/6.); grave No. 321 (Budinský-Krička – Točík 1991, 64–65; Taf. xliiv/7.);
4. Kővágószőlős – Tüskési Dűlő (Kiss 1977, 66. Pl. xxiv.);
5. Morávský Sv. Ján (Eisner 1933–34, 186; Eisner 1941, 379–380; Čilinská 1984, 163–170.);
6. Tiszafüred–Majoros grave No. 395 (Garam 1995, 54, Abb. 23, Taf. 178.); grave No. 423 (Garam 1995, 57, Abb. 24, Taf. 90, Taf. 178/1.); grave No. 630 (Garam 1995, 82, Taf. 108, Taf. 182/1.)



MAP 23 *Javelins (p.v)*

1. Bratislava–Devínska Nová Ves–A-Tehel'ňa grave No. 200 (Eisner 1952, 60, Obr. 28/6.);
2. Komárno–8. Shipyard grave No. 85 (Trugly 1987, 271–272, Taf. XXVI–XXVIII., Taf. XXVI/13.);
3. Košice–Šebastovce grave No. 58 (Budinský-Krička – Točík 1991, 18, Taf V/7);
4. Mosonszentpéter–Kavicsbánya grave No. 1 (Sótér 1885, 202.); grave No. 3 (Sótér 1885, 202.); grave No. 4 (Sótér 1885, 202.); grave No. 5 (Sótér 1885, 202.);
5. Regöly–Kupavár grave No. 108 (Kiss – Somogyi 1984, 134–135, 75. tábla 15.);
6. Valalúky–Všechsvätých grave No. 46/83 (Zábojník 1995, Taf. III; Husár 2005, Tab. 12/13.)

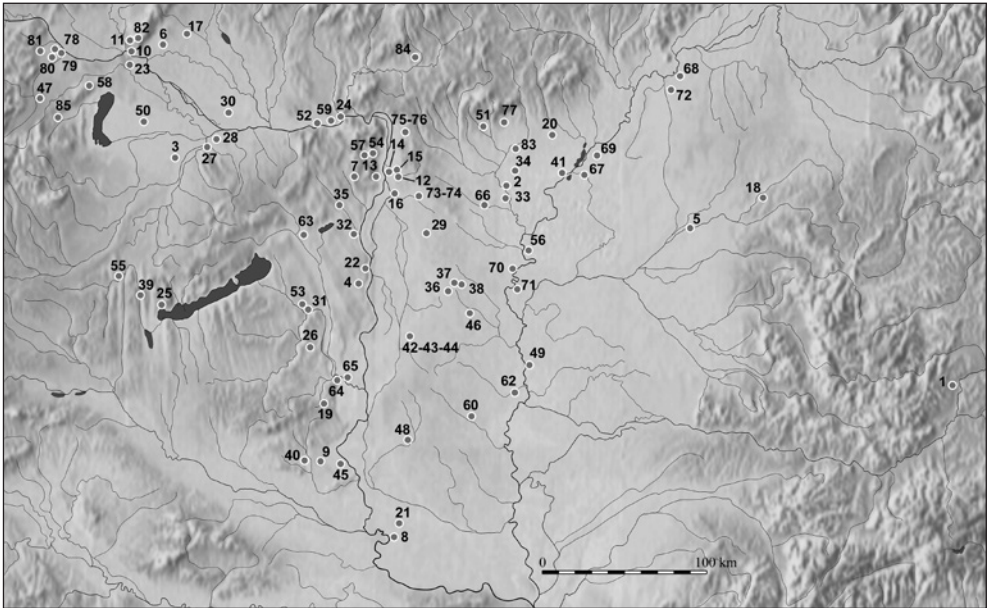


MAP 24 *Early Avar edged weapons in the Carpathian Basin*

1. Ada–Ciglana Petefi; 2. Andocs–Újhalastó; 3. Apatin–Sikeš; 4. Aradac–Mečka;
5. Bačko Petrovo Selo–Čtk; 6. Bággyog–Gyűrhegy; 7. Bakonytamási–Hegytelek;
8. Balatonfűzfő–Szalmássy telep; 9. Band; 10. Bešenova Veche; 11. Bicske–Óbarok;
12. Biharkeresztes–Lencsés hát; 13. Bočar; 14. Bócsa; 15. Bóly–Sziebert puszta; 16. Börcs–Nagydomb; 17. Brateiu 3; 18. Budakalász–Dunapart; 19. Budapest III. Óbuda, Szőlő utca;
20. Budapest XXI. Csepel–Kavicsbánya; 21. Bugyi–Úrbőpuszta, Jankó A. földje;
22. Čadjavica–Branjiska; 23. Cikó; 24. Čoka–Kremenjak; 25. Čonoplja–ciglana Partizan;
26. Csákberény–Orondpuszta; 27. Csanytelek–Felgyői határút; 28. Csengele–Jóhárt;
29. Csengőd–Páhipuszta, Kenyérvágóhalom; 30. Csépa; 31. Cserkút–Szőlők; 32. Csolnok–Szedres, Kenderföldek dűlő; 33. Csongrád–Felgyő; 34. Dabas (Gyón)–Paphegy;
35. Derecske; 36. Derekegyház–Rárós–Zöldhalom; 37. Deszk G; 38. Deszk H; 39. Deszk L; 40. Deszk M; 41. Deszk O; 42. Deszk P; 43. Deszk Sz; 44. Deszk T; 45. Dombegyháza–Homokbánya; 46. Fajsz–Garadomb; 47. Ferencszállás–Lajtár Gy. –Bárdos P. halma;
48. Fülöpszállás–Temető út; 49. Füzesgyarmat–téglyári agyagbánya; 50. Gátérvasútállomás; 51. Gyomai Köröspart; 52. Gyoma–Torzsás-zug; 53. Gyöng–Vásártér;
54. Győr–Ménfőcsanak–Bevásárló (Metro); 55. Győr–Téglavető; 56. Gyula–Szentbenedek;
57. Hajdúböszörmény–Cskos-tanya; 58. Hajdúdorog–Városkert utca 5–7; 59. Hajós–Cifrahegy; 60. Halimba–Belátó-domb; 61. Jászapáti–Nagyállás út; 62. Jászboldogháza;
63. Kaba–belterület; 64. Káloz–Nagyhőrcsőkpuszta; 65. Kecel–Schwacho föld;
66. Kecskemét–Sallai út; 67. Kehidakustyán–Kehida, Központi Tsz-major;
68. Keszthely–Fenékpuszta, Puztaszentegyházi dűlő; 69. Keszthely–Fenékpuszta;
70. Keszthely–városi temető; 71. Kiskőrös–Rákóczi u. 49; 72. Kiskőrös–Vágóhíd;
73. Kiskőrös–Város-alatt; 74. Kiskunfélegyháza–Pákapuszta; 75. Kiskunmajsza–Pálos;
76. Kiszombor E, Kiss J. tanya; 77. Kiszombor O; 78. Kölked–Feketekapu A; 79. Kölked–Feketekapu B; 80. Környe; 81. Körösladány; 82. Kunágota; 83. Kunmadaras–Újvárosi temető;
84. Kunpeszér–Felsőpezséri út; 85. Kunszentmárton–Habranyi-telep, Erzsébet u.;

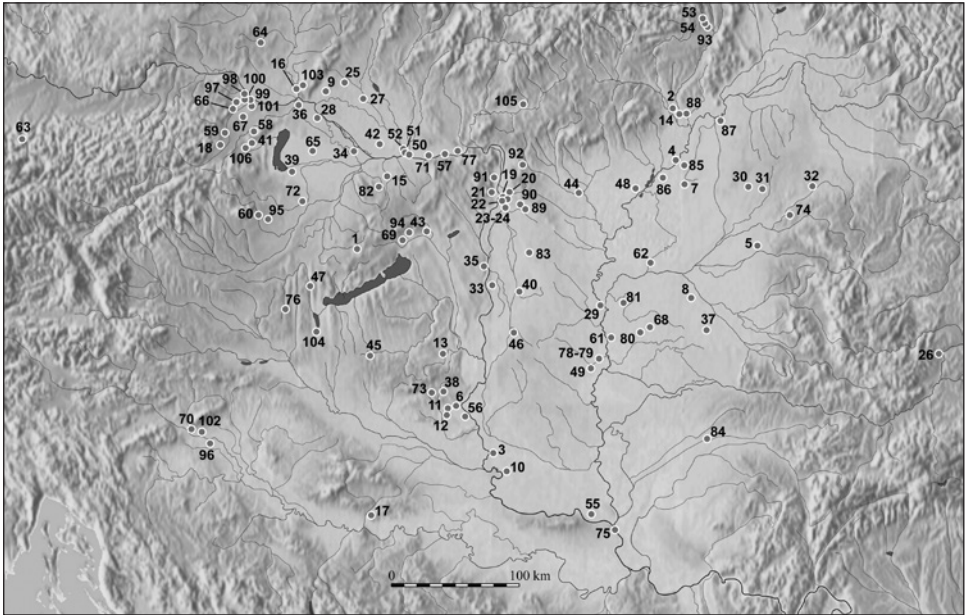
86. Kunszentmiklós–Bábony; 87. Lovászpataona–Homokbánya; 88. Lovćenac–Hollingerház; 89. Maglód–Kertváros (Katona József u. 5); 90. Makó; 91. Mali Idoš; 92. Mandelos; 93. Mezőkovácsháza–Új Alkotmány Tsz.; 94. Mokrin–Vodoplav; 95. Mór–Akasztódomb; 96. Nagykőrös–Szurdok; 97. Nagymányok; 98. Napkor–Vásárosnaményi út; 99. Nošlac; 100. Novi Kneževac; 101. Nyíregyháza–Rozsrétszőlő, Szelkó-dűlő II; 102. Nyíregyháza–Városi kertészet; 103. Oroszlány II. – Borbála-telep; 104. Öcsöd–MRT 96/a lh.; 105. Paks–Gyapa TO33; 106. Pančevo–Najeva, Donjogradska-ciglana; 107. Pápa–Úrdomb; 108. Pécs–Köztemető; 109. Pókaszpetk–Mesterföldek; 110. Rábapordány–Árokszer domb; 111. Rácalmás–Rózsa major; 112. Rákócziújfalú–Felsővarsány; 113. Sánpetru German; 114. Sombor–c. Kukula; 115. Sopron–téglagyári agyagbánya; 116. Srbobran–ciglana Buducnost; 117. Stapar–Mali Stapar; 118. Sükösd–Ságod; 119. Szárazd; 120. Szeged–Fehértó A; 121. Szeged–Fehértó B; 122. Szeged–Kundomb; 123. Szeged–Makkoserdő; 124. Szeghalom–Kovács-halom; 125. Szegvár–Oroműlő; 126. Szegvár–Sápoldal; 127. Szekszárd–Bogyiszlói út; 128. Szekszárd–Palánk; 129. Szekszárd–Tószegi dűlő; 130. Szentes–Lapistó; 131. Szőreg–A (Iván-téglagyár); 132. Szőreg–Homokbánya; 133. Szőreg–Kiss-tanya; 134. Tápé–Kerekgyöpp; 135. Târgu Mureș; 136. Tarhos–Tarhospuszta; 137. Tarnaméra–Urak dűlő; 138. Tárnok; 139. Tatabánya–Kertváros; 140. Tépe–Görbektet; 141. Tiszaalpár–Tiszaújfalú; 142. Tiszaalpár–Várdomb; 143. Tiszabercel–Vékás dűlő; 144. Tiszacsege–Sóskás; 145. Tiszaderzs–Szentimrei út; 146. Tiszaeszlár–Sinkahegy; 147. Tiszafüred–Majoros; 148. Tiszalök–Kövestelek; 149. Tiszaújfalú–Bokros-part; 150. Tiszavárkony–Hugyin-part; 151. Tiszavasvári–Koldusdomb; 152. Tokod; 153. Tokod–Altáró, Erzsébet-akna; 154. Tokod–Várberek; 155. Tolnanémedi–Szentpéteri szőlőhegy; 156. Törökbálint site No. 36/25; 157. Újfehértó–Micskepuszta; 158. Üröm–Kossuth Lajos utca 50; 159. Vác–Kavicsbánya; 160. Valea lui Mihai–Rétalj; 161. Vereşmort; 162. Vértesacsá–Pinceharaszt dűlő; 163. Vértesacsá–Tükör utca; 164. Visegrád–Dunameder; 165. Visznek–Kecskehegy; 166. Zagyvarékas–Gát; 167. Zamárdi–Réti földek; 168. Zillingtal; 169. Zsámbok





MAP 25 *Middle Avar edged weapons in the Carpathian Basin*

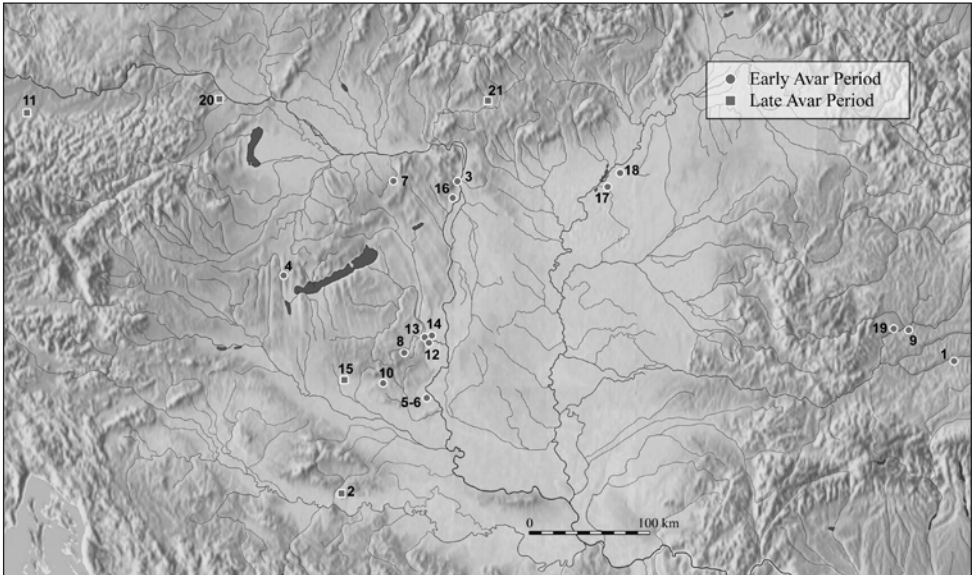
1. Aiudul de Sus; 2. Alattván–Tulát; 3. Bányog–Gyűrhegy; 4. Baracs–Ágocs-tanya;
5. Berettyóújfalu–Nagy Bócs-dűlő; 6. Bernolákovo–Sakoň; 7. Biatorbágy–Hosszúrétek;
8. Bogojevo I; 9. Bóly–Sziebert puszta; 10. Bratislava–Devín; 11. Bratislava–Devínska Nová Ves;
12. Budapest x. Rákos, Ejtőernyőstorony; 13. Budapest XII. Farkasvölgy, Törökbálinti út;
14. Budapest XIV. Zugló, Népstadion; 15. Budapest XIV. Zugló, Tihanyi tér; 16. Budapest XX. Soroksár–Rétek; 17. Čataj; 18. Cheşereu–Forrásdomb; 19. Cikó;
20. Dormánd–Hanyipuszta; 21. Doroslovo–Mosztanga part; 22. Dunaújfalu–Öreghegy;
23. Edelstal–Bergweide; 24. Esztergom–Nagyhegy; 25. Gyenesdiás–Algyenes; 26. Gyöng-Vásártér;
27. Győr–Ménfőcsanak–Bevásárló (Metro); 28. Győr–Repülőtér–Hecsepuszta;
29. Hernád–Hernádpuszta; 30. Holiare; 31. Igar–Vámi szőlőhegy; 32. Iváncsa–Szabadság utca;
33. Jánoshida–Tótkérpuszta; 34. Jászapáti–Nagyállás út; 35. Kajászó–Újmajor;
36. Kecskemét–Ballószög; 37. Kecskemét–Mikóstelep; 38. Kecskemét–Nyíri erdő;
39. Kehidakustyán–Kehida, Központi Tsz-major; 40. Kiskassa–Téglaház; 41. Kisköre–Halastó;
42. Kiskőrös–Cebe puszta; 43. Kiskőrös–Vágóhíd; 44. Kiskőrös–Város-alatt;
45. Kölked–Feketekapu B; 46. Kunszállás–Fülöppjakab; 47. Leobersdorf–Ziegelei Polsterer;
48. Madaras–Téglavető dűlő; 49. Mártély–Csanyi part; 50. Mosonszentpéter;
51. Nagyréde–Ragyogópart; 52. Nyergesújfalu–Dunameder; 53. Ozora–Tótipuszta;
54. Pilisborosjenő–Téglagyár; 55. Pókaszepetk–Mesterföldek; 56. Rákóczi-falva–Kastélydomb;
57. Solymár–Dünyehégy; 58. Sommerein am Leithagebüрге;
59. Stúrovo–Obid; 60. Szeged–Átokháza; 61. Szeged–Fehértó A; 62. Szeged–Fehértó B;
63. Székesfehérvár–Órhalom; 64. Szekszárd–Palánki dűlő; 65. Szekszárd–Tószegi dűlő;
66. Tápiószéle; 67. Tiszaderzs–Szentimrei út; 68. Tiszaeszlár–Sinkahegy;
69. Tiszafüred–Majoros; 70. Tiszakécske–Óbög; 71. Tiszakürt–Homokdomb, Bundaszárító;
72. Tiszavasvári–Petőfi u. 49.; 73. Üllő; 74. Üllő-collection Kund;
75. Váchartyán; 76. Váchartyán–Gosztonyi szőlőhegy; 77. Visonta–Nagycsapás;
78. Wien II–Simmering; 79. Wien II–Simmering–Csokorgasse; 80. Wien 23–Liesing;
81. Wien 13–Hietzing, Spohrgasse; 82. Záhorská Bystrica; 83. Zaránk–Erki halom;
84. Zelovce–Fingó; 85. Zillingtonal



MAP 26 *Late Avar edged weapons in the Carpathian Basin*

1. Ajka–Edelmann téglavető; 2. Alsószolca–Tószor, Petőfi u. 18.; 3. Apatin–Dunavska u.; 4. Ároktő–Református templom; 5. Ártánd–Kapitány-dűlő; 6. Babarc–Halastó; 7. Balmazújváros–Hortobágy–Árkus; 8. Békés–Hidashát; 9. Bernolákovo–Sakoň; 10. Bogojevo IV; 11. Bóly–József A. u. 6; 12. Bóly–Sziebert puszta; 13. Bonyhádvarasd; 14. Bócs–Sárgaföldes part; 15. Bónyrétalap–Rétalap, Koldusdűlő; 16. Bratislava–Devínska Nová Ves; 17. Brodski Drenovac–Plana; 18. Brunn a.d. Schneebergbau–Hochquellenwasserleitung; 19. Budapest IX. Ferencváros, Wekerle telep; 20. Budapest X. Rákos, Ejtőernyőstorony; 21. Budapest XII. Farkasvölgy, Farkasrét; 22. Budapest XIX. Kispest, Homokbánya; 23. Budapest XX. Soroksár; 24. Budapest XX. Soroksár–Rétek; 25. Čataj; 26. Cicău–Szelistye; 27. Čierny Brod I. Homokdomb; 28. Čunovo; 29. Csongrád–Sárkányfarak; 30. Debrecen–Bellegelő; 31. Debrecen–Haláp; 32. Dindești–Latura brazilor; 33. Dunaegyháza–Újsolt; 34. Dunaszeg–Gyulamajor; 35. Dunaújváros–Öreghegy; 36. Edelstal–Bergweide; 37. Elek–Kispél; 38. Erzsébet–Belterület; 39. Fertőd–Süttör; 40. Fülöpszállás–Kiskunsági MgTsz; 41. Grosshöflein; 42. Holiare; 43. Iszkaszentgyörgy 2/8. lh. Imre-major; 44. Jászberény–Református templom; 45. Kaposmérő–Agyagbánya; 46. Kecel–Határ dűlő; 47. Kehidakustyán–Kehida, Központi Tsz-major; 48. Kisköre–Halastó; 49. Kiskundorozsma–Szőksóstó; 50. Komárno–3. Váradího u.; 51. Komárno–6 Hadovce; 52. Komárno–8 Shipyard; 53. Košice–Barca; 54. Košice–Šebastovce; 55. Kovilj – ul. L. Novoselca; 56. Kölked–Feketekapu B; 57. Lábatlan–Cementgyár; 58. Leithaprodersdorf–Anna-kreuz; 59. Leobersdorf–Ziegelei Polsterer; 60. Lukácsháza–Hegyalja dűlő; 61. Mártély–Ómártély; 62. Mezőtúr–Szatmári dűlő; 63. Micheldorf–Schottergrube; 64. Mistelbach–Krankenhaus; 65. Mosonszentjános; 66. Mödling–Goldene Stiege; 67. Münchendorf–Drei Mahden; 68. Orosháza–Bónum-téglagyár; 69. Öskü–Agyaggödör; 70. Podsused; 71. Radvaň nad Dunajom–Žitavska Tõň; 72. Répcelak–Várdomb; 73. Romonya I. Hirdihát; 74. Sacueni–Veresdomb; 75. Slankamen na Dunavu; 76. Söjtör–Petőfi utca; 77. Štúrovo–Obid; 78. Szeged–Fehértó A; 79. Szeged–Fehértó B; 80. Székkutas–Kápolna-dűlő;

81. Szentés–Kaján; 82. Táp–Borbapuszta; 83. Tatárszentgyörgy–Szabadrét;  
 84. Timișoara–Módosi híd; 85. Tiszacsege–Nagykecskés puszta; 86. Tiszafüred–Majoros;  
 87. Tiszalök–Hajnalos tanya; 88. Tiszalúc; 89. Úlló 1. Disznójárás; 90. Úlló 11. Vecsési  
 községhatár; 91. Üröm–Borosjenői téglagyár; 92. Váckisújfalu–Ceriná; 93. Valalíky–  
 Všečšvätých; 94. Várpalota–Bántapuszta; 95. Vasasszonyfa; 96. Velika Gorica–Visoki  
 Brijeg; 97. Vösendorf; 98. Wien 11–Simmering, Hauffgasse; 99. Wien 11–Simmering–  
 Csokorgasse; 100. Wien 23–Liesing; 101. Wien 23–Zwölfaxing; 102. Zagreb–Kruge;  
 103. Záhorská Bystrica; 104. Zalakomár–Lesvári dűllő; 105. Želovce–Fingó; 106. Zillingtal

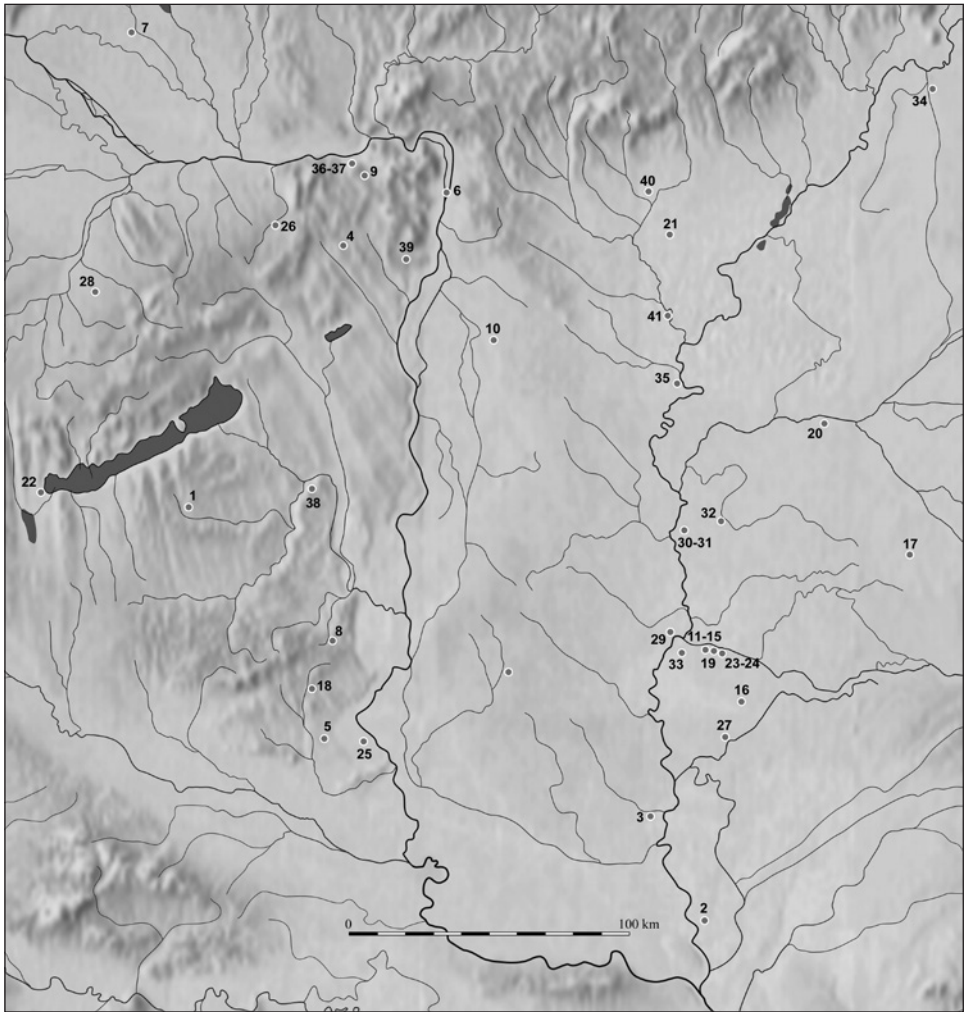


MAP 27 *Distribution of Avar-age spathae (E.I.A)*

1. Brateiu 3. grave No. 85 (Nestor – Zaharia 1973, 193–201; Bóna 1986a, 171, 182; Bâzru 1986, 89–104; Bâzru 1991, 211–214; Kiss 1992, 65.); grave No. 214 (Nestor – Zaharia 1973, 193–201; Bóna 1986a, 171, 182; Bâzru 1986, 89–104; Bâzru 1991, 211–214; Kiss 1992, 65.); grave No. 218 (Nestor – Zaharia 1973, 193–201; Bóna 1986a, 171, 182; Bâzru 1986, 89–104; Bâzru 1991, 211–214; Kiss 1992, 65.); 2. Brodski Drenovac–Plana stray find (Vinski-Gasparini – Ercegović 1958, 144–145, 157. Tabl. xv/8.); 3. Budapest III. Óbuda, Szőlő utca (Kovrig 1955a, 33, 7. jegyzet; Kovrig 1955b, 167, No. 4; Nagy 1962, 72; Nagy 1973, 358, 361; Simon 1991, 288; Nagy 1998, 45, Taf. 38/31.); 4. Kehidakustyán–Kehida, Központi Tsz-major grave No. 1 (Szóke–Vándor 1986; Simon 1991, 294; Szóke 2002, 77, 9/e.); 5. Kölked–Feketekapu grave No. A-39 (Kiss 1996, 29, 228, Taf. 26/19.); grave No. A-142 (Kiss 1996, 53, 228, Taf. 455/12.); grave No. A-211 (Kiss 1996, 64–65, Taf. 49/18.); grave No. A-253 (Kiss 1996, 74, Taf. 55/1.); grave No. A-257 (Kiss 1996, 75, Taf. 56/1.); grave No. A-260 (Kiss 1996, 76, Taf. 57/1.); grave No. A-264 (Kiss 1996, 77–78; Taf. 59/12.); grave No. A-268 (Kiss 1996, 78–79, Taf. 59/10.); 6. Kölked–Feketekapu grave No. B-82 (Kiss 2001, 27–28, 11. Taf. 28/13.); grave No. B-132 (Kiss 2001, 65–66, Taf. 41/25.); grave No. B-336 (Kiss 2001, 115–117, Taf. 75/13.); grave No. B-470 (Kiss 2001, 152–153, Taf. 86/35.); 7. Környe grave No. 8 (Salamon – Erdélyi 1971, 14–15, Taf. 32/6; Simon 1991, 295.); grave No. 16 (Salamon – Erdélyi 1971, 15, Taf.

32/5; Simon 1991, 296.); *grave No. 44* (Salamon – Erdélyi 1971, 18, Taf. 32/7; Simon 1991, 296.); *grave No. 50* (Salamon – Erdélyi 1971, 18, Taf. 33/1; Simon 1991, 296.); *grave No. 66* (Salamon – Erdélyi 1971, 20, Taf. 33/4; Simon 1991, 296.); *grave No. 97* (Salamon – Erdélyi 1971, 23, Taf. 33/5; Simon 1991, 297.); *grave No. 100* (Salamon – Erdélyi 1971, 23–24, Taf. 33/2; Simon 1991, 297.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 33/3., Abb. 4/5.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 34/1; Simon 1991, 298.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 34/2; Simon 1991, 298.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 34/6; Simon 1991, 298.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 34/7; Simon 1991, 298.); *stray find* (Salamon – Erdélyi 1971, 30, Taf. 34/8; Simon 1991, 298.); 8. Nagymányok (Wosinsky 1890, 432–435; Hampel 1897. I. 142–143; Simon 1991, 303.); 9. Nošlac *grave No. 6* (Rusu 1962, 275.); *grave No. 17* (Rusu 1962, 275.); *grave No. 21* (Rusu 1962, 275.); *grave No. 43* (Rusu 1962, 275.); 10. Pécs–Köztemető *grave No. 30* (Kiss 1977, 94–96, Pl. xxxvii/6–7.); *grave No. 36* (Kiss 1977, 96, Pl. xxxviii.); *grave No. 38* (Kiss 1977, 96, Pl. xxxix.); 11. Stieringhofen (Tovornik 1978; ADAM 317.); 12. Szekszárd–Bogyiszlói út *grave No. 16* (Rosner 1999, 13, Taf. 2/15.); *grave No. 216* (Rosner 1999, 34, Taf. 16/11.); *grave No. 356* (Rosner 1999, 51.); *grave No. 390* (Rosner 1999, 54, Taf. 28/1.); 13. Szekszárd–Palánk *grave No. 29* (Salamon 1968, 5.); 14. Szekszárd–Tószegi dűlő *grave No. 52*, 1752; 15. Szigetvár region (Kiss 1983, 289–290; Kiss 1985, 289–290, Abb. 155–156; Kovács 1994–95, 176, Abb. 12/4.); 16. Tétény (IKM 531/1910; ArchÉrt 1892, 380.1.); 17. Tiszaderzs–Szentimrei út *grave No. 1 or 2* (Kiss 1993, 65.); 18. Tiszafüred–Majoros *grave No. 44* (Garam 1995, 13, Abb. 5; Taf. 123.); *grave No. 114/b* (Garam 1995, 21, Abb. 8; Taf. 174/1.); *grave No. 768* (Garam 1995 94, Taf. 184.); 19. Verešmort *grave No. 5* (Roska 1934, 125, Abb. 4/D.); *grave No. 13* (Roska 1934, 128, Abb. 4/C.); *grave No. 16* (Roska 1934, 129, Abb. 4/B.); 20. Wien–xxiii. Liesing *grave No. 3* (Mossler 1948, 222.); 21. Želovce *grave No. 124* (Čilinská 1973, 57, Taf. xxii/16.)

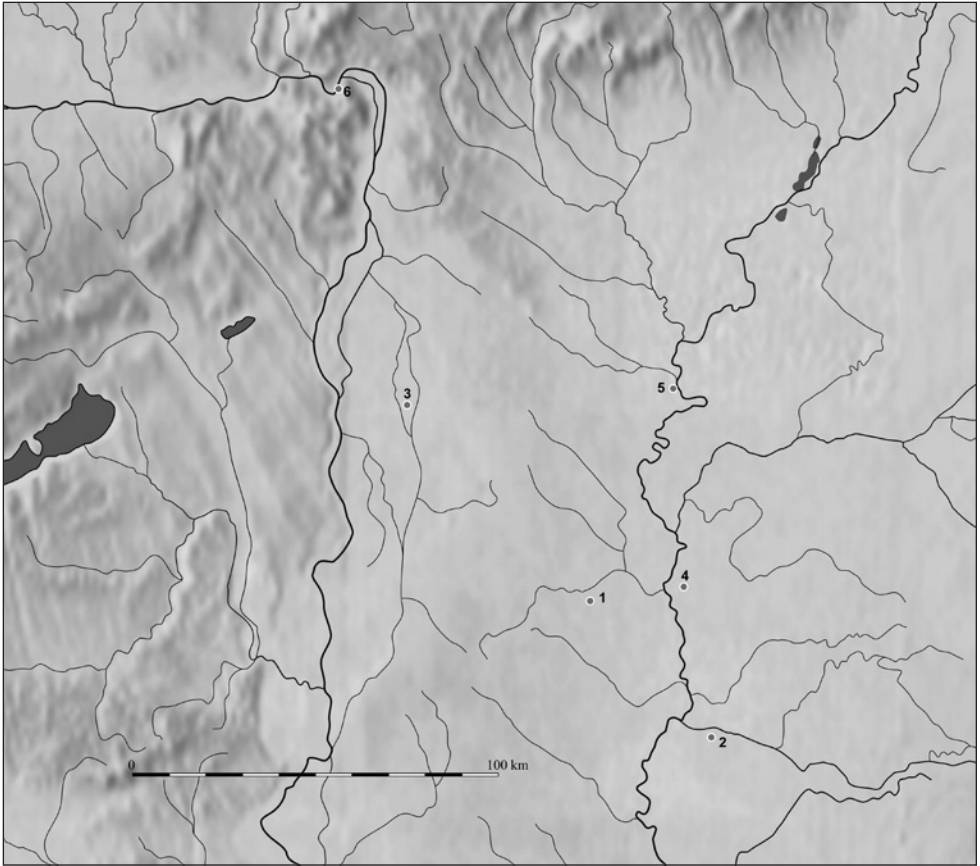




MAP 28 *Double-edged swords with lenticular cross section (E.I.B)*

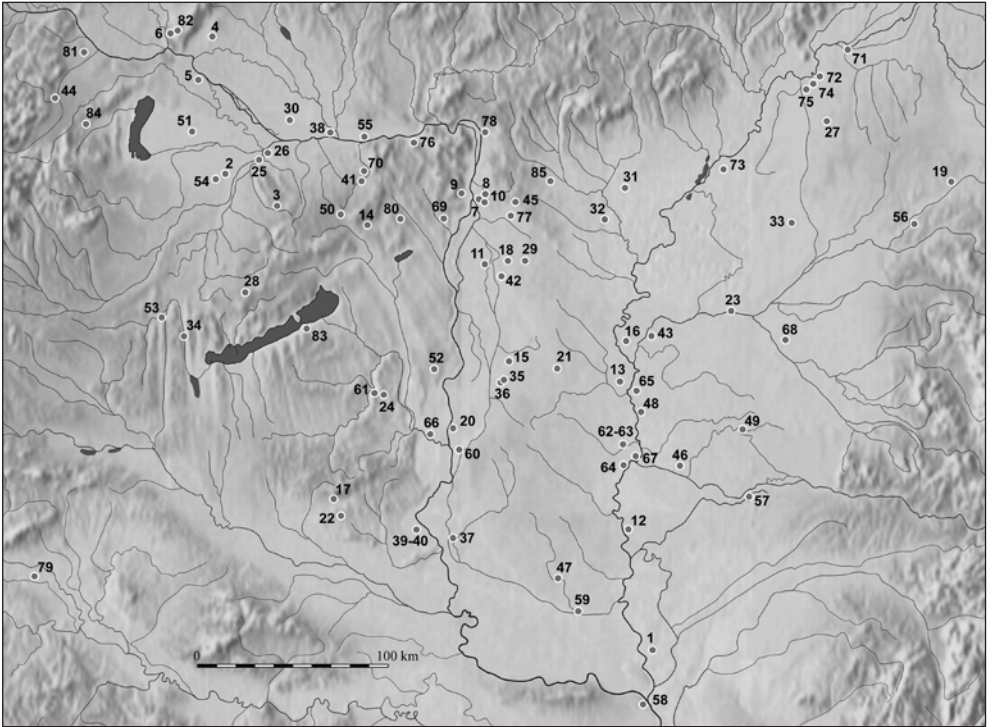
1. Andocs–Újhalastó grave No. 21 (Garam 1973, 134, 6. ábr 42; Simon 1991, 286.);
2. Aradac–Mečka grave No. 31 (Nád 1959, 58, Tab. VIII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152, LXXIX/6; Simon 1991, 286.), grave No. 85 (Nád 1959, 62, Tab. XXVII/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196, Abb. 2; 203–204.); 3. Bačko Petrovo Selo–Čik grave No. 28 (Brukner 1968, 172, T. LIX/1; Simon 1991, 289, 16. kép 11; Bugarski 2009, 39, 116–117, Fig. 102, T.VI.); 4. Bicske–Óbarok (Fülöp 1984a, 257–258, 6. ábra; Simon 1991, 287.); 5. Bóly–Sziebert puszta B grave No. 21 (Papp 1962, 185, XXVII. t. 4; Simon 1991, 288.); 6. Budakalász–Dunapart grave No. 458;
7. Čierny Brod I.–Homokdomb grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábójník 1995, No. 19.); 8. Cikó stray find; 9. Csolnok–Szedres, Kenderföldek grave No. 13 (Erdélyi 1988, 195, 203; Somlósi 1988, 207–210, Fig. 1–2; Simon 1991, 290.); 10. Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6; 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195.); 11. Deszk G grave No. 8 (Csallány 1939, 127,

- 129, I. t. 2–2a, 2. kép 2–2a; Simon 1991, 291; 16. kép 6.); grave No. 49 (Csallány 1939, 137; Simon 1991, 291.); 12. Deszk M, Czuczai I. földje grave No. 1 (Csallány 1939, 137; Simon 1991, 291.); 13. Deszk O, Czuczai III grave No. 3 (Csallány 1939, 137; Csallány 1969–1971, 13; Simon 1991, 291.); grave No. 5 (Csallány 1972, 13.); 14. Deszk P grave No. 1 (MFM 53, 23, 22); grave No. 2 (Csallány 1939, 137; Trogmayer 1984, 89, 15. lh.; Simon 1991, 291.); 15. Deszk Sz grave No. 16 (Csallány 1939, 137; Trogmayer 1984, 89, 18. lh.); 16. Dudeștii Vechi (Kisléghy Nagy 1911, 314; Simon 1991, 286–287; ADAM, 120.); 17. Elek–Kispél (Csallány 1956a, 110. o. 252. lh.; ADAM, 127.); 18. Erzsébet-belterület (Juhász 1897, 263; Hampel 1905. II. 332; Kiss 1977, 25.); 19. Ferencszállás–Lajtár Gy. –Bárdos P. halma grave No. 3 (Csallány 1939, 17; Csallány 1956a, 285.); 20. Gyoma–Torzsás-zug (MRT 8. 1989. 4/276.); 21. Jászapáti–Nagyállás út grave No. 402 (Madaras 1994, 95, Taf. L/12.); 22. Keszthely–Fenekpuszta grave No. 1 (Lipp 1885a, 9; Hampel 1894, 89–90; Bóna 1982–83, 117–119, 12. t. 1; Simon 1991, 294, n. kép 6.); 23. Kiszombor E grave No. 29 (Csallány 1939, 137; Simon 1991, 295, 10. kép 5, 19. kép.); 24. Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 25. Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57); 26. Környe grave No. 75 (Salamon – Erdélyi 1971, 20, Taf. 10, Taf. 32/1, Abb. 4/1; Simon 1991, 296.); grave No. 109 (Salamon – Erdélyi 1971, 24, Taf. 19, Taf. 32/4; Simon 1991, 297.); stray find (Salamon – Erdélyi 1971, 30, Taf. 34/4; Simon 1991, 298.); stray find (Salamon – Erdélyi 1971, 30, Taf. 34/5; Simon 1991, 298.); 27. Mokrin–Vodoplav grave No. 62 (Mrkobrad 1980, 98, 152; Simon 1991, 302; Balogh 2004, 268, 299, 23. kép 48.); grave No. 67 (Balogh 2004, 268–269, 24–25. kép, 25. kép 21.); 28. Pápa–Úrdomb grave No. 1 (Jankó 1930, 128, 136–138, 140, 87. kép 16; Simon 1991, 304.); 29. Szeged–Makkoserdő grave No. 142 (Salamon 1995, 122–123, 162, Pl. 10.); grave No. 285 (Salamon 1995, 134, 162, Pl. 20/1.); 30. Szegvár–Oromdűlő grave No. 100 (Simon 1991, 306; Lőrinczy 1992, 90–100, Abb. 12/3.); 31. Szegvár–Sáppoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18.); 32. Szentés–Lapistó (Csallány 1933–34, 207–208; Simon 1991, 307.); 33. Szőreg–Homokbánya grave No. 2 (Bálint – Maráz 1971, 75–76; Trogmayer 1977, 65; Kürti 1983, 187; Simon 1991, 307.); 34. Tiszavasvári–Koldusdomb grave No. 1 (Csallány 1960a, 51–55, XVI. t. 2; Simon 1991, 308, 14. kép 4; 15. kép n.); 35. Tiszavárkony–Hugyin-part grave No. 20 (Kiss 1962, 18–19, XIV. t. 2., XXXVII. t. 3; Simon 1991, 308.); grave No. 24 (Kiss 1962, 22–23, XII/1. tábla, XXXVII. t. 3; Simon 1991, 308.); grave No. 55 (Kiss 1962, 45, XXXVII. t. 5; Simon 1991, 309.); 36. Tokod–Várberek (Bakay 1967, 137–138.); 37. Tokod (MNM 36/1907); 38. Tolnanémedi–Szentpéteri szőlőhegy, stray find (Nagy 1901a, 317, I/11, 3, 4; Fettich 1937, 128; Simon 1991, 309.); 39. Törökbálint 36/25. site grave No. 1 (Kovrig 1957, 119–120, XVII. T. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8.); 40. Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343, Fig. 6/1, 16; Simon 1991, 311, 16. kép 9.); 41. Zagyvarékas–Gát (Könyöki 1897; Csallány 1956a, 1073. lh.)



MAP 29 *Double-edged swords with ring-pommel*

1. Csengele–Jó járt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290., 15. kép 8.); 2. Deszk L grave No. 13 (H 22) (Csallány 1939, 137; Csallány 1972, 24–26, Abb. 4, Taf. VI–VII; Trogmayer 1984, 88, 12. lh.; Simon 1991, 291, 11. kép 5, 18. kép; Lőrinczy 1994, 114–115.); 3. Kunszentmiklós–Bábonny grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.); 4. Szegvár–Oromdűlő grave No. 903; 5. Tiszavárkony–Hugyín-part grave No. 39 (Kiss 1962, 30–31, XXXVII. t. 4, XXXVIII. t. 1; Simon 1991, 309.); grave No. 84 (Kiss 1962, 64–66, XXXVII. t. 6; Simon 1991, 309.); 6. Visegrád–Duna-meder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.)



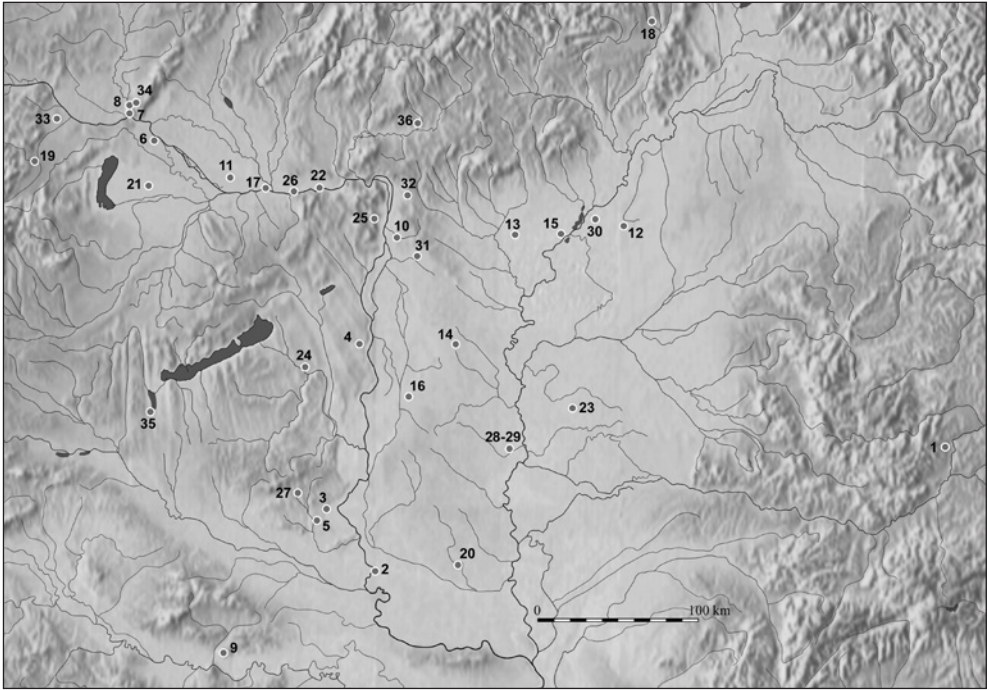
MAP 30 *Single-edged swords without crossguard in Avar-age Carpathian Basin*

1. Aradac – Mečka grave No. 46 (Nád 1959, 59, Tab. IX/11; Mrkobrad 1980, 98, 152, LXXIX/5; Simon 1991, 286.); 2. Bággyog–Gyúrhegy grave No. 2 (Lovas 1929b, 253; Fettich 1943, 7; Simon 1991, 286.); 3. Bakonytamási–Hegytelek grave No. 10 (Hidvéghi 1902, 407; MRT 4, 1972.); 4. Bernolákovo–Sakoň grave No. 23 (Kraskovská 1962, 429–430, tab. V/36.); grave No. 34 (Kraskovská 1962, 432–433, tab. VII/17.); 5. Bratislava–Čunovo grave No. 44 (Hampel 1905, II, 147; III, Taf. 125.); 6. Bratislava-Devínska Nová Ves–A-Teheľňa grave No. 633 (Eisner 1952, 139–140, Obr. 73/1.); 7. Budapest IX. Ferencváros, Wekerle telep grave No. 13 (Nagy 1973, 201–202, 205, Abb. 142; Nagy 1991, 100–101, 443, No. 37–38; Nagy 1998, 64, Taf. 50/2–4.); 8. Budapest X. Rákos, Ejtőernyőstorony grave No. 2 (Nagy 1998, I, 69–70, II, Taf. 54/3.); grave No. 19 (Nagy 1998, I, 71–72, II, Taf. 60/13–15.); 9. Budapest XII. Farkasvölgy (Farkasrét) (Simon 1991, 288; Nagy 1998, I, 98, II, Taf. 83/n.); 10. Budapest XIX. Kíspest, Homokbánya (Csallány 1956, 93; Nagy 1998, 136.); 11. Bugyi–Ürböpuszta, Jankó A. földje grave No. 14 (Bóna 1957, 158, 171, XXIII. t. 16; Simon 1991, 289.); 12. Čoka–Kremenjak grave No. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, Fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50, Abb. 9, B, 2; Mrkobrad 1980, 98, 152, LXXIX/7; Simon 1991, 289.); 13. Csanytelek–Felgyői határút grave A (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lórinčy – Szalontai 1993, 282, Taf. VII.); 14. Csákberény–Orondpuszta grave No. 86 and 150 (Kiss 1962, 70; Simon 1991, 290.); 15. Csengőd–Páhipuszta, Kenyérvágóhalom (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40.); 16. Csepna (Csallány 1956, 99, 174. lh.; Simon 1991, 290; Madaras 1995, Nr. 5.); 17. Cserkút–szőlők, stray find (Kiss 1977, 18; Pl. 1/17; Simon 1991, 290.); 18. Dabas (Gyón)–Paphegy, stray find (Simon–Székely 1991, 188.); 19. Dindești–Latura brazilor



(Németi 1983, 137–139, Fig. 3/3; Bóna 1986a, 176; Bóna 1989, 79, 88; Cosma 2002, 189, Pl. 98/1.); 20. Fajsz–Garadomb grave No. 2 (Balogh – Kőhegyi 2001, 333–363.); 21. Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20.); stray find (Fettich 1926a, 8, Fig. 20; Simon 1991, 292.); 22. Gyód–Máriahegy grave No. 67 (Kiss 1977, 41. Pl. IX.); 23. Gyoma–Köröspart (MNM 177/1895.721); 24. Gyönk–Vásártér grave No. 99 (Rosner 1971–1972, 121–122, II. tábla); 25. Győr–Ménfőcsanak–Bevásárló (Metro) grave No. 643; 26. Győr–Téglavető grave No. 484 (XJM 53.278.1379); grave No. 494 (Börzsönyi 1905, 20–22; Fettich 1943, 31.) (XJM 53.278.1378.); 27. Hajdúdorog–Városkert utca grave No. 1 (Kralovánszky 1992, 119–128, 3. ábra 7; Simon 1991, 293; Garam 1992, 142–144, Taf. 44/10.); 28. Halimba I grave No. 85 (Török 1998, 25, Taf. 10.); 29. Hernád–Hernádpusztá grave No. 1 (Éber 1901; Czágányi é.n. 18–25; Hampel 1905, 730–732.); 30. Holiare grave No. A (1932) (Kovrig 1948; Zábójník 1995, 284.); grave No. 155 (Točík 1968a, 35–36, Taf. XLV.); grave No. 177 (Točík 1968a, 38–39, Taf. XVII/3.); 31. Jászapáti–Nagyállás út grave No. 84 (Madaras 1994, 33–34, Taf. XIII/27.); 32. Jászboldogháza (Madaras 1982, 64; Simon 1991, 293.); 33. Kaba–belerület (Zoltai 1929, 38–39., 9. ábra; Simon 1991, 293, 21. kép 1.); 34. Kehidakustyán–Kehida, Központi Tsz-major grave No. 67 (Szőke 2002, 77. 9/b.); 35. Kiskőrös–Rákóczi u. 49. (László 1940, 150, XXIV. t. 16.); 36. Kiskőrös–Város alatt grave No. 9 (Horváth 1935, 36; Fettich 1937, 137, CXXVII. t. 8–10; László 1955, 163, 7, Fig. 47; Simon 1991, 294–295, 14. kép 3.); grave No. 193 (Horváth 1935, 50.); 37. Kolut (Csallány 1956, 150, 547. lh; Simon 1991, 295.); 38. Komárom–8 Shipyard grave No. 36 (Trugly 1987, 258, Abb. 4, Taf. IX/5.); 39. Kölked–Feketekapu grave No. A-107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.); grave No. A-227 (Kiss 1996, 69, Taf. 52/8.); 40. Kölked–Feketekapu grave No. B-106 (Kiss 2001, 43–44, Taf. 32/9.); 41. Környe grave No. 35 (Salamon – Erdélyi 1971, 17, Taf. 5, Taf. 33/6, Taf. xxx/6; Simon 1991, 296.); grave No. 78 (Salamon – Erdélyi 1971, 21, Taf. 12, Taf. 33/9; Simon 1991, 296.); grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 16, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.) grave No. 130 (Salamon – Erdélyi 1971, 27, Taf. 23, Taf. 33/8; Simon 1991, 297.); grave No. 135 (Salamon – Erdélyi 1971, 27, Taf. 24, Taf. 33/7; Simon 1991, 297.); grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 26, Taf. 32/3., Abb. 4/2; Simon 1991, 297, 16. kép 18.); stray find (Salamon – Erdélyi 1971, 30, Taf. 34/3; Simon 1991, 298.); 42. Kunpeszér–Felsőpeszéri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299.); grave No. 8 (H. Tóth 1984, 12; Simon 1991, 299.); grave No. 9 (H. Tóth 1984, 12; Simon 1991, 299.); grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299.); grave No. 30/A (H. Tóth 1984, 12; Simon 1991, 299.); 43. Kunszentmárton grave No. 1 (Csallány 1933, 3, 14, 37, VI. t. II; Simon 1991, 300.); 44. Leobersdorf–Ziegelei Polsterer grave No. 35/B (Daím 1987, 227; Taf. 30/B/4.); 45. Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428.); 46. Makó (Csallány 1939, 137; Simon 1991, 301.); 47. Mali Idoš grave No. 84 (Gubitzá 1911, 125; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 152, LXXIX; Simon 1991, 301.); 48. Mártély–Csanyi part grave No. 7 (Farkas – Hampel 1892, XII, 424; Hampel 1905, II. 110–111; III. Taf. 89/22.); grave No. 8 (ArchÉrt 1892, XII, 424; Hampel 1905, II. 111; III. 90.); 49. Mezőkovácsháza–Új Alkotmány Tsz. grave No. 1/a (T. Juhász 1973, 101, 104, II. t. 5.); 50. Mór–Akasztódomb grave No. 3 (Török 1954, 56; Simon 1991, 302.); grave No. 12 (Török 1954, 57, 58; Simon 1991, 302.); grave No. 25 (Török 1954, 56–58, 4. kép. IX. t. 1; Simon 1991, 302.); stray find (Török 1954, 57; Simon 1991, 302.); 51. Mosonszentjános–Kavicsbánya grave No. 53 (MNM 3/1927.270); 52. Paks–Gyapa TO33 grave No. 12; 53. Pókaszepetk–Mesterföldék, Avar utca grave No. 332 (Sós – Salamon 1995, 166–167, Pl. XX.); 54. Rábapordány–Árokszer domb (Börzsönyi 1902, 22.); 55. Radvaň nad Dunajom–Žitavska Tõň grave A (Budinský–Krička 1956, 6–8, Tab. x/2.); 56. Sacueni

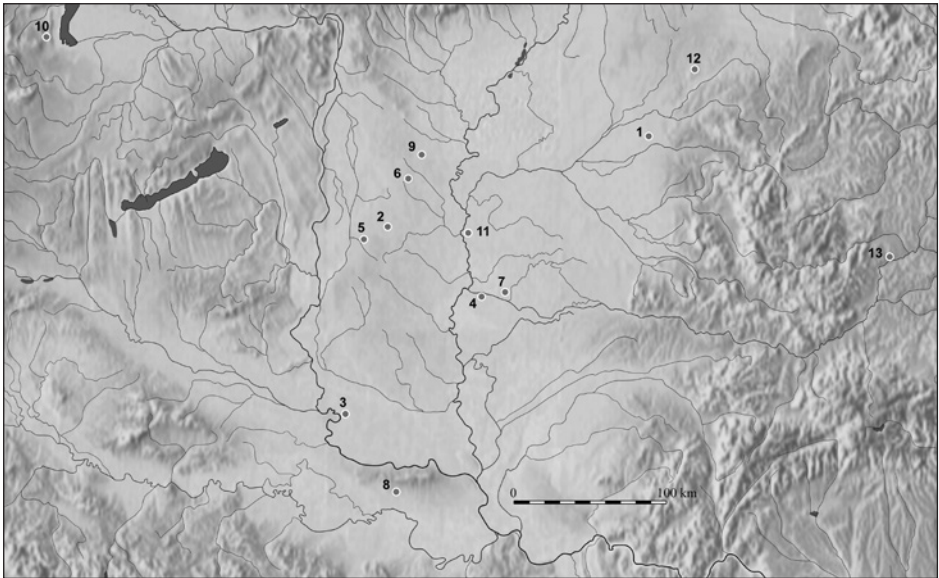
grave No. 2 (Bóna 1986a, 175; Bóna 1989, 88.); 57. Sínpetru German (Dörner 1960, 424, 426, Fig. 3/6; Simon 1991, 304; Garam 1992, 144, Taf. 53/12.); 58. Slankamen na Dunavu (Mrkobrad 1980, 98, 155.); 59. Srbobran–ciglana „Buducnost” (Hadmaš 1957, 236–239; Dimitrijević – Kovačević – Vinski 1962, 60); 60. Sükösd–Ságod grave No. 287 (Wicker 1981, 56; Simon 1991, 305.); 61. Szárazd (Fettich 1926a, 7, x. t. 1; Bóna 1982–83, 126–127, n. j.; Simon 1991, 305, 16. kép 3; Kovács 2001, 185, 187–190; 7. kép 10.); 62. Szeged–Fehértó A grave No. 26 (Csallány 1939, 137; Madaras 1981, 35, 3. t.; Simon 1991, 305; Madaras 1995b, 17, Pl. 4/14.); grave No. 34 (Madaras 1995b, 18, Pl. 6/n.); A grave No. 167 (Madaras 1995b, 32, Pl. 19/10.); 63. Szeged–Fehértó B grave No. 12 (Madaras 1995b, 138; Pl. 2–3.); grave No. 34 (Madaras 1995b, 141., Pl. 8.); grave No. 36 (Madaras 1995b, 141., Pl. 9/7.); 64. Szeged–Kundomb grave No. 180 (Csallány 1939, 137; Kürti 1983, 189; Simon 1991, 305; Salamon – Sebestyén 1995, 28, 55, Pl. 25/5.); 65. Szegvár–Oromdűlő grave No. 68, 76, 900, 930; 66. Szekszárd–Töszegi dűlő grave No. 620; 67. Tápé–85. számú kútkörzet grave No. n (Simon 1993b, 31–34, 1–6. képek); 68. Tarhos–Tarhospuszta (Hajnal 1876–77, 131; Csallány 1956, 87, 73. lh; MRT 10. 1998. 668–669; Simon 1991, 287.); 69. Tárnok (Garam 1991b, 222, 3. kép, 5 kép 2.); 70. Tatabánya–Kertváros (Bíró 1961, 51; Szatmári 1988, 211.); 71. Tiszaabercel–Vékás dűlő grave No. 3 (Csallány 1960a, 35, 63, XVI. t. 3; Simon 1991, 308.); 72. Tiszaeszélr–Sinkahegy, stray find (Csallány 1960a, 37, XVI. t. 1.); 73. Tiszafüred–Majoros grave No. 186 (Garam 1995, 28–30, Abb. n, Taf. 73, Taf. 174/10.); grave No. 257 (Garam 1995, 37, Taf. 78, Taf. 177/1.); grave No. 629 (Garam 1995, 82, Abb. 33, Taf. 183/1.); 74. Tiszalók–Hajnalos tanya, stray find (Csallány 1960a, 45.); 75. Tiszavasvári–Téglagyár (Csallány 1956, 208, 1005a. sz.; Csallány 1960a, 51.); 76. Tokod–Altáró, Erzsébet-akna (Bakay 1965, 16; MRT 5. 1979, 339.); 77. Üllő I. –Disznójárás grave No. 44 (Horváth 1935, 14, XXII. tábla 6.); 78. Vác–Kavicsbánya grave No. 301 (Simon 1991, 310; Tettamanti 2000, Taf. 16/1.); 79. Velika Gorica–Visoki Brijeg (Mrkobrad 1980, 155.); 80. Vértesacsca–Pinceharaszt dűlő (Kralovánszky 1969, 48–49; Bánki 1971, 165–166; Simon 1991, 310.); 81. Wien XXIII. Liesing grave No. XXII (Mossler 1975, 87; Taf. VIII/22.); 82. Záhorská Bystrica grave No. 37 (Kraskovská 1972, 17, Obr 17/1.); 83. Zamárdi–Rétiföldek grave No. 193 (Bárdos – Garam 2009, 38–39, Taf. 24/29–36.); grave No. 565 (Bárdos – Garam 2009, 83, Taf. 74/23–28.); grave No. 1493 (Bárdos – Garam 2009, 196, Taf. 166.); 84. Zillingtal grave No. D-3 (Mehofer 2006, 163, Abb. D.); 85. Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14.); grave No. 2 (Garam 1983, 144, Abb. 5/7; 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.)



MAP 31 *Single-edged swords with crossguards*

1. Aiudul de Sus (Horedt 1956, 396; Horedt 1958a, 93, Fig.17/3; Horedt 1968, 71; Bóna 1986a, 116; Bóna 1989, 88.);
2. Apatin–Dunavska u. (Dimitrijević – Kovačević – Vinski 1962, 34, Abb. 4; Mrkobrad 1980, 98, 155, CXXXVIII/5.);
3. Babarc–Halastó grave No. 3 (Kiss 1977, 11, Pl. LXIA/1; Kiss 1979a, 394.);
4. Baracs–Ágocs-tanya (Nagy 1901b, 285, Hampel 1905, I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110; Csallány 1956, 109, Nr. 244; Bóna 1982–83, 110–111.);
5. Bóly–Sziebert puszta A, stray find (Papp 1962, 168, xxviii. b. 1.); stray find (Papp 1962, 168, xxviii. b. 2.); grave No. 20 (Papp 1962, 174–175, VII–VIII. t., xxviii. t. 3.);
6. Bratislava–Čunovo grave No. 54 (Hampel 1905, II. 148, 150; III. Taf. 126; Fettich 1927, V/1.); grave No. 127 (Hampel 1905, II. 158–159, III. Taf. 134.);
7. Bratislava–Devín (Plachá – Hlavicová – Keller 1990, 18–19, tab. 1, F21–22; Zábójník 1990, 106, tab. 1; Štefanovičková 1993, 286–287; Zábójník 1995, No. 6.);
8. Bratislava–Devínska Nová Ves–A-Tehel'ňa grave No. 79 (Eisner 1933, tab. 91/1; Eisner 1952, 25, Obr. 13/1);
9. Brodski Drenovac–Plana grave No. 19 (Vinski–Gasparini – Ercegović 1958, 144–145, 157. Tabl. xv/4.);
10. Budapest x. Rákos, Ejtőernyőstorony grave No. 1 (Nagy 1998, I. 69, II. Taf. 54 A, Taf. 152/1a-b.);
11. Holiare grave No. 11 (Kovrig 1948, 120–121; Zábójník 1995, 284.);
12. Hortobágy–Árkus stray find (Tóth 1960, 73–74; DM 76.1.39);
13. Jászapáti–Nagyállás út grave No. 264 (Madaras 1994, 71, Taf. xxxvii/28.);
14. Kecskemét–Nyíri erdő (Hampel 1897, 47.);
15. Kisköre–Halastó grave No. 32 (Garam 1979, 13–15, Taf. 9, Taf. 29/3.); grave No. 109 (Garam 1979, 24, Abb. 8, Taf. 18, Taf. 29/4.);
16. Kiskőrös–Cebe(puszta) grave No. 7 (Török 1975b, 307–308, Fig 1/13.);
17. Komárno–8 Shipyard grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/13.);
18. Košice–Šebastovce grave No. 94 (Budinský-Krička – Točík 1984, 174, Obr. 1; Obr. 4–5; Budinský-Krička – Točík 1991, 25–26, Taf. xii/7.);
19. Leobersdorf–Ziegelei Polsterer grave No. 71 (Daim 1987, 241; Taf. 68/3.);
20. Mali Idoš (Kishegyes) grave No. 72 (Gubitz 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301, 16. kép 16.);
21. Mosonszentjános–Kavicsbánya grave No. 31 (Fettich 1927, 168, VII/13.);

22. Nyergesújfalu–Dunameder; 23. Orosháza–Bónum-téglagyár grave No. 51 (Juhász 1995, 24, Taf. III/1.); 24. Ozora–Tótipusztá grave No. 1 (Wosinsky 1896, 1000–1008, Taf. 252–254; Hampel 1897. II. LV–LVII. táblák; Hampel 1905 III. Taf. 268; Bóna 1982–83, 104–109; Garam 1992, 145–146, Taf. 61, Taf. 62/8.); 25. Pilisborosjenő–Téglagyár (Jelentés 1906, 43–44; Kovrig 1955a, 37; MRT 7. 141, 15/2. lh.; Simon 1991, 304.) (MNM 71/1906.1); 26. Radvaň nad Dunajom–Žitavska Tŕň grave No. 31 (Budinský–Krička 1956, 31–32, Tab. xxx/7.); 27. Romonya I grave No. 41 (Kiss 1977, 112–113, Pl. XLVII/10.); 28. Szeged–Fehértó A grave No. 16 (Csallány 1939, 137; Madaras 1981, 35; Simon 1991, 305; Madaras 1995, 16, Pl. 2/6.); grave No. 159 (Madaras 1995b, 31; Pl. 20/8.); 29. Szeged–Fehértó B grave No. 66 (Madaras 1995b, 143, Pl. 12.); grave No. 69 (Madaras 1995b, 144, Pl. 13.); grave No. 95 (Madaras 1995b, 146, Pl. 18/14.); grave No. 113 (Madaras 1995b, 148, Pl. 19/9.); 30. Tiszafüred–Majoros grave No. 326 (Garam 1995, 46, Abb. 19; 47, Taf. 83/1–14; Taf. 177/2.); grave No. 496 (Garam 1995, 65, Abb. 27, Taf. 97, Taf. 179/2.); grave No. 946 (Garam 1995, 112, Abb. 45, Taf. 186.); 31. Űllő I.–Disznójárás grave 'A' (Horváth 1935, 31, xxII/7.); 32. Váchartyán–Gosztonyi szőlőhegy, stray find (Ferenczy 1963, 101, 14 kép 3.); 33. Wien xxIII–Liesing grave No. 1 (Mossler 1948, 220.); 34. Záhorská Bystrica grave No. 16 (Kraskovská 1972, 13, Obr. 12/1.); 35. Zalakomár–Lesvári dűlő grave No. 135 (Szőke 2002, 80, 14.); grave No. 210; grave No. 505 (Szőke 2002, 80, 13.); 36. Želovce grave No. 27 (Čilinská 1973, 38, Taf. IV/1.); grave No. 30 (Čilinská 1973, 39, Taf. VI/19.); grave No. 167 (Čilinská 1973, 65, Taf. xxIX/1.); grave No. 843 (Čilinská 1973, 183, Taf. cxxxIII/17.)

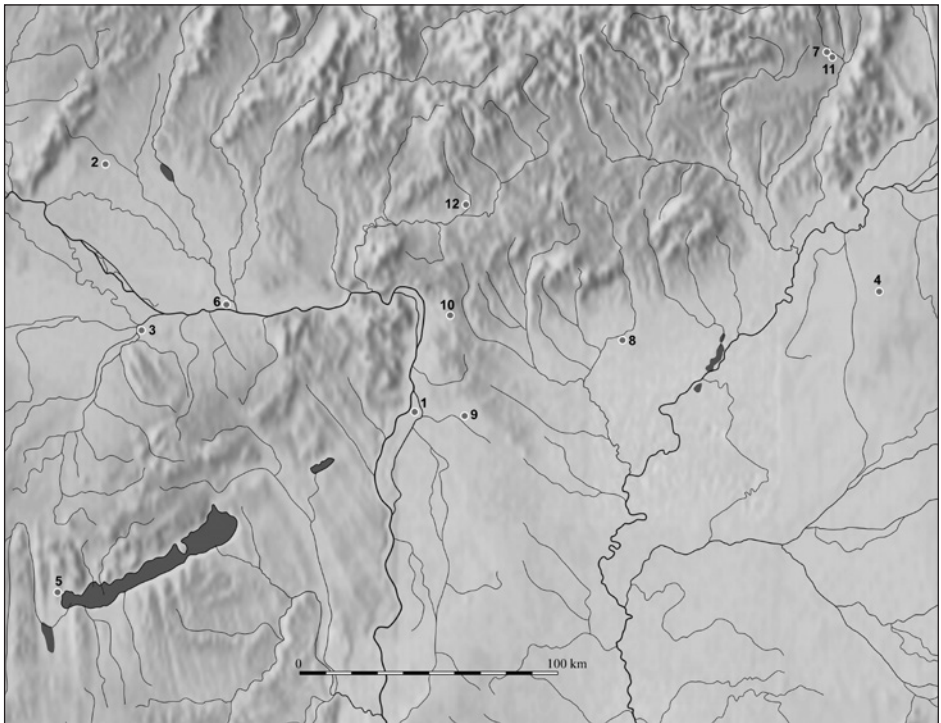


MAP 32 *Distribution of single-edged ring-pommel swords*

1. Biharkeresztes–Lencsésbát (Mesterházy 1987, 222, 6. kép/1–2; Bóna 1990, 113–124; Simon 1991, 287, II. kép 1. 21. kép 3.); 2. Bócsa (Fettich 1937, 123, Taf. cxlix. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; Pl. XLIII/1, 11–12, Pl. XLIV–XLV/1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 3. Bogojevo I grave No. 10 (Cziráký 1899, 422–423; Velenrajter 1960, 180–181, 183, I. t. 1; Dimitrijević – Kovačević – Vinski 1962, 38–39, Abb. 12; Korošec 1959, 103–117, Abb. 1–21, Taf. I; Simon 1991, 287.); 4. Deszk H grave No. 22 (Csallány 1972, 24.);

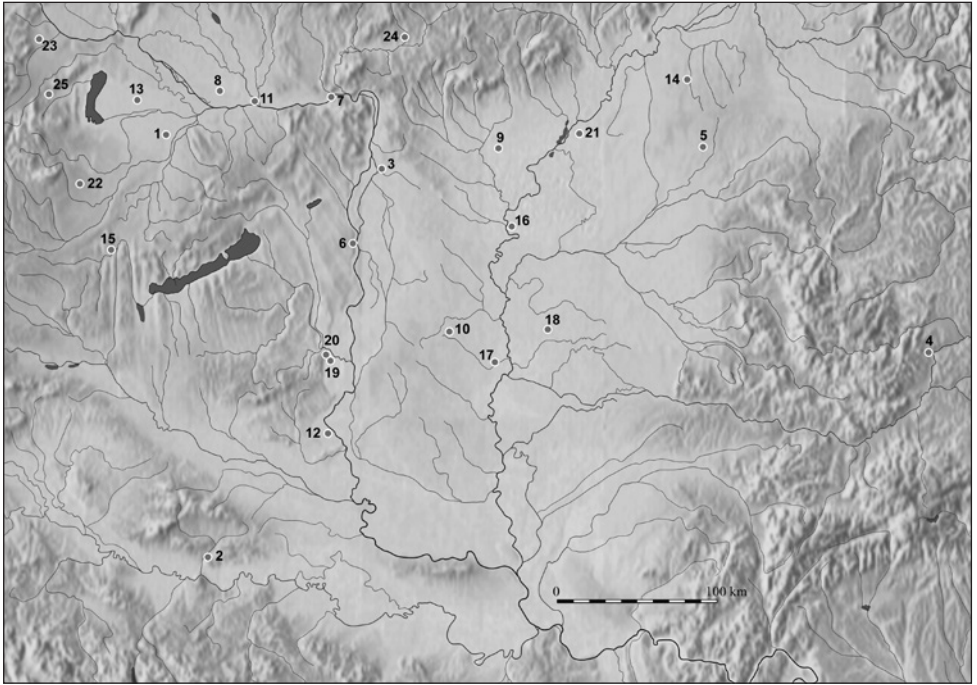


5. Kecel–Schwacho föld (László 1955, 232–233, Fig. 64, Pl. LI–LII, LIII/25; Biczó 1984, 27, 56. 15. ábra 173. lh.; Simon 1991, 294, 15. kép 2.); 6. Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294.); 7. Makó–Ipari Park 4. lh. O. 177 S. 183 (courtesy of Cs. Balogh); 8. Mandélos (Ercegović – Pavlović 1973–74, 108, Fig. 1, I. t. 1; Pl. 111/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 9. Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép.); 10. Sopron–téglagyári agyagbánya (Gömöri 1976, 144–145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.); 11. Szegvár–Oromdűlő grave No. 335, 540; 12. Valea lui Mihai–Rétalj (Németi 1983, 145–146, Fig. 8/1; Bóna 1986a, 167; Simon 1991, 310; Cosma 2002, 235, Pl. 265/5.); 13. Vereşmort (Rustoiu – Ciuta 2008, 74–75.)



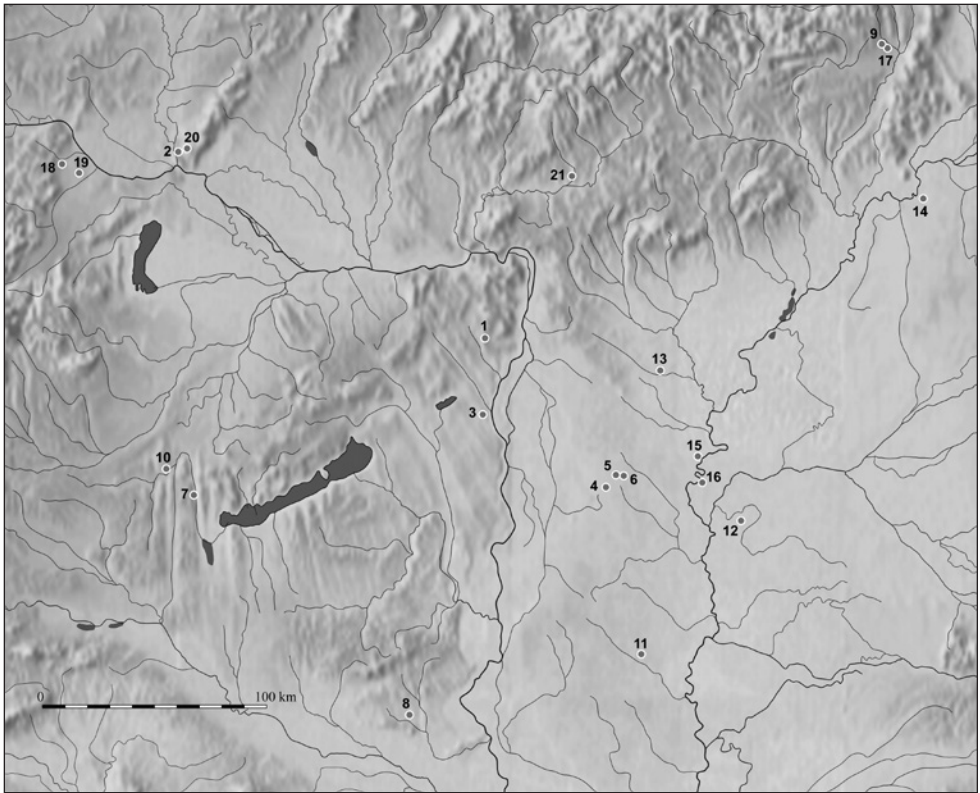
MAP 33 *Distribution of single-edged swords with false edge*

1. Budapest XXI. Csepel–Kavicsbánya (Nagy 1998, I. 178–180.); 2. Čataj I. – Zemanské Gejzove grave No. 60 (Hanuliak – Zábajník 1982, 498; Zábajník 1995, No. 17, Abb. 4.); 3. Győr–Téglavető-dűlő grave No. 72 (Börzsönyi 1902, 21; Fettich 1943, 16–17.); 4. Hajdúdorog–Városkert utca 7. grave 'A' (Kralovánszky 1992, 136, 138, 10. ábra); 5. Keszthely–városi temető, stray find (Lipp 1885b, 30, 27–28. rajz); 6. Komárno–8 Shipyard grave No. 30, 71 and 72 (Trugly 1987, 256, Abb. 3; Taf. V/6; 265, Taf. xv/15; 265–266, Taf. xvi/17.); 7. Košice–Šebastovce grave No. 161 (Budínský–Krička – Točík 1991, 38; Taf. xxii/16.); 8. Tarnaméra, Urak dűlő grave No. 'X' (Szabó 1965, 42, VIII. t. 1–3.); 9. Üllő–Kund gyűjtemény grave No. 1 (MNM 9/1951.1); 10. Váchartyán–Gosztonyi szőlőhegy grave No. 6 (Ferenczy 1963, 85; 14 kép 1.); 11. Valaalky–Všechsvätých grave No. 85/83; 12. Želovce grave No. 78 (Čilínská 1973, 49, Taf. xiv/20–21.)



MAP 34 *Distribution of sabres with slightly curved blade (E.III.A)*

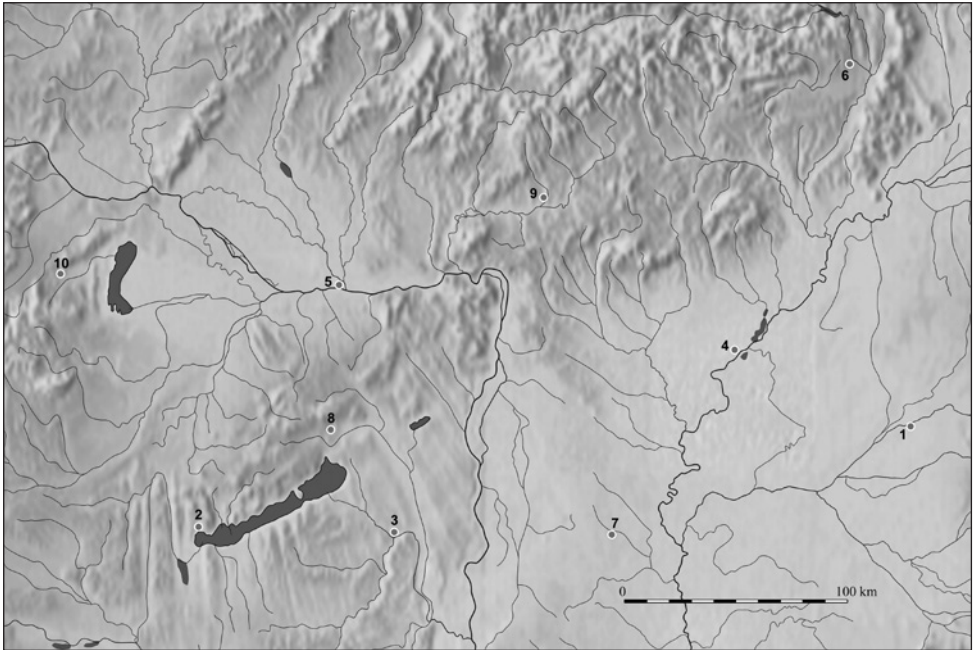
1. Bággyog–Gyűrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7.); 2. Brodski Drenovac–Plana grave No. 14 (Vinski–Gasparini – Ercegović 1958, 144–145, 156, Tabl. XIV.); 3. Budapest XX. Soroksár, Homokbánya (Simon 1991, 288; Nagy 1998, I, 142, II, Taf. 98/1, Taf. 211/2.); 4. Cicău–Szelistye grave No. 3 (Winkler – Takács – Păiuș 1977, 270–271, Fig. 4/1.); 5. Debrecen–Haláp (Zoltai 1929, 40–42; Ecsedi 1930, 70–71; Sőregi 1939, 87–88, Abb. 52–53.); 6. Dunaiújváros–Öreghegy, Rákits D. földje grave No. 7 (1) (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, Nr. 20a–d, Taf. 27–28, 35, 9; Garam 1994–95, 134, 8. kép.); 7. Esztergom–Naphegy (Jankó 1930, 137, 3. j.; Csallány 1956, 267 (268.); MRT 5, 1979, 228, 8/139; Simon 1991, 292.); 8. Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15.); grave No. 484 (Točík 1968a, 78, Taf. LXX/1.); 9. Jászapáti–Nagyállás út grave No. 265 (Madaras 1994, 71–72, Taf. XXXIX/14.); 10. Kiskunmajsa–Pálos (Csólyospálos) (ADAM, 200.); 11. Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8.); 12. Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15.); 13. Mosonszentjános–Kavicsbánya grave No. 27 (Fettich 1927, 166–168, V/2.); 14. Nyíregyháza–Rozsrétszőlő, Szelkő-dűlő II. grave No. 81 (Pintye 2006, 293.); 15. Pókaszeptek–Mesterföldek, Avar utca grave No. 16 (Sós – Salamon 1995, 137, Pl. I.); 16. Rákóczi falva–Kastélydomb grave 'B' (Selmeczi – Madaras 1979–80, 146, VII, tábla 9.); 17. Szeged–Fehértó B grave No. 29 (Csallány 1946–48, 352–353; Madaras 1995b, 140, Pl. 5/17.); 18. Székkutas–Kápolna-dűlő grave No. 541 (Nagy é.n. (2003) 71, 194. kép 1.); 19. Szekszárd–Bogyiszlói út grave No. 484 (Rosner 1999, 65, Taf. 33/12.); 20. Szekszárd–Palánki dűlő grave No. 69; 21. Tiszafüred–Majoros grave No. 379 (Garam 1995, 52, Taf. 86, Taf. 177/1.); 22. Vasasszonyfa (Kiss 1985, 15, tábla 2.); 23. Vösendorf grave No. 715 (Sauer 2007, 94–95.); 24. Želovce grave No. 79 (Čilinská 1973, 49, Taf. xv/1.); grave No. 175 (Čilinská 1973, 67, Taf. xxxi/1.); 25. Zillingtal grave No. D-330 (Mehofer 2006, 162, Abb. C.)



MAP 35 *Distribution of sabres with curved blade (E.III.B)*

1. Biatorbágy–Hosszúrétek grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. képek); 2. Bratislava-Devínska Nová Ves–A-Tehel'ňa grave No. 842 (Eisner 1952, 181–182, Obr. 89/1.); 3. Ivánca–Szabadság utca 20. (Bóna 1970, 243; 251. 8/5.); 4. Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187, Taf. 1, Abb. 1.); 5. Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905. II. 379–380. III. Taf. 277.); 6. Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47.); 7. Kehidakustyán–Kehida, Központi Tsz-major grave No. 106 (Szóke 2002, 77, 9/c.); 8. Kiskassa–Téglaház, stray find (Hampel 1897, 144.; CXLVII; Hampel 1905 III. Taf. 276.); 9. Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. XXVIII/17.); grave No. 230 (Budinský-Krička – Točík 1991, 49; Taf. XXXI/8.); grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. XXXVI–XXXVIII.); 10. Pókaszepetk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. XXVII.); 11. Szeged–Átokháza (Csallány 1946–48, 350–352.); 12. Szentés–Kaján grave No. 33 (Korek 1943, 6, XLIV. t. 7.); 13. Tápiószéle–Somogyi B. út 21. (Dinnyés 1973, 45, x./16.); 14. Tiszaezslár–Sinkahegy, stray find (Csallány 1960a, 33, XVI. t. 4.); 15. Tizsakécske–Óbög grave No. 1 (Garam 1991a, 129, 131, 2 kép 7; 3. kép 2.); grave No. A (Garam 1991a, 134; 132, 3. kép 1.); grave No. 3 (MNM 8/1931.4b); stray find (Garam 1991a, 134; 132, 3. kép 3.); 16. Tizsakürt–Homokdomb, Bundaszárító (Kovách 1893, 355–356.); 17. Valalíky–Všechvátých grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153.); 18. Wien XIII. Unter St. Veit, Spohrstrasse (Daim 1979, 63, Taf. 7/2.); 19. Wien–XXIII. Liesing grave No. 4 (Mossler 1948, 225–227.); grave No. 21 (Mossler 1975, 86, Taf. VI/1.); 20. Záhorská Bystrica grave No. 49 (Kraskovská 1972, 18, Obr. 19/1.);

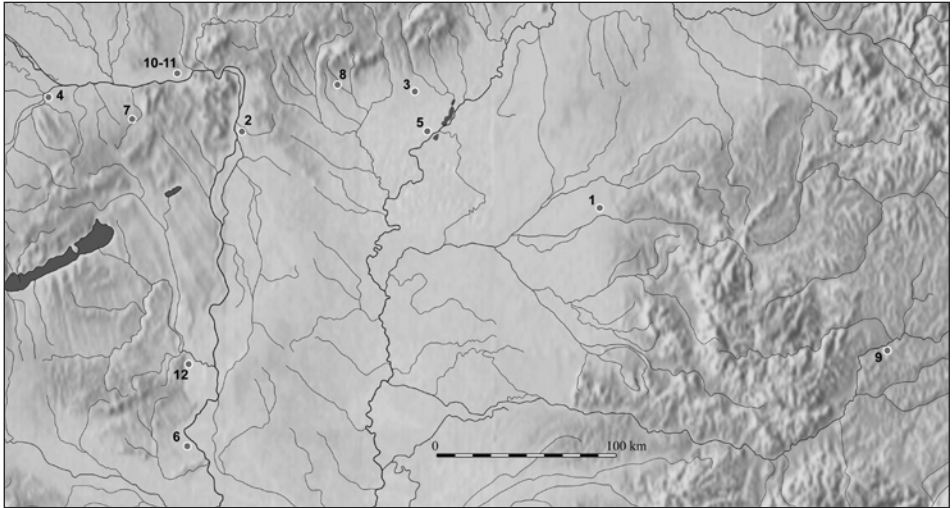
21. Želovce grave No. 1 (Čilinská 1973, 34, Taf. 1/1.); grave No. 44 (Čilinská 1973, 42, Taf. VIII/21.); grave No. 170 (Čilinská 1973, 66, Taf. xxx/12.); grave No. 312 (Čilinská 1973, 91–92, Taf. LIII/11.); grave No. 335 (Čilinská 1973, 97, LVII/1.); grave No. 371 (Čilinská 1973, 102–103, Taf. LXIII/16.); grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26.); grave No. 490 (Čilinská 1973, 124, Taf. LXXXIII/17.); grave No. 564 (Čilinská 1973, 135, Taf. xc1/12.)



MAP 36 *Distribution of sabres with strongly curved blade*

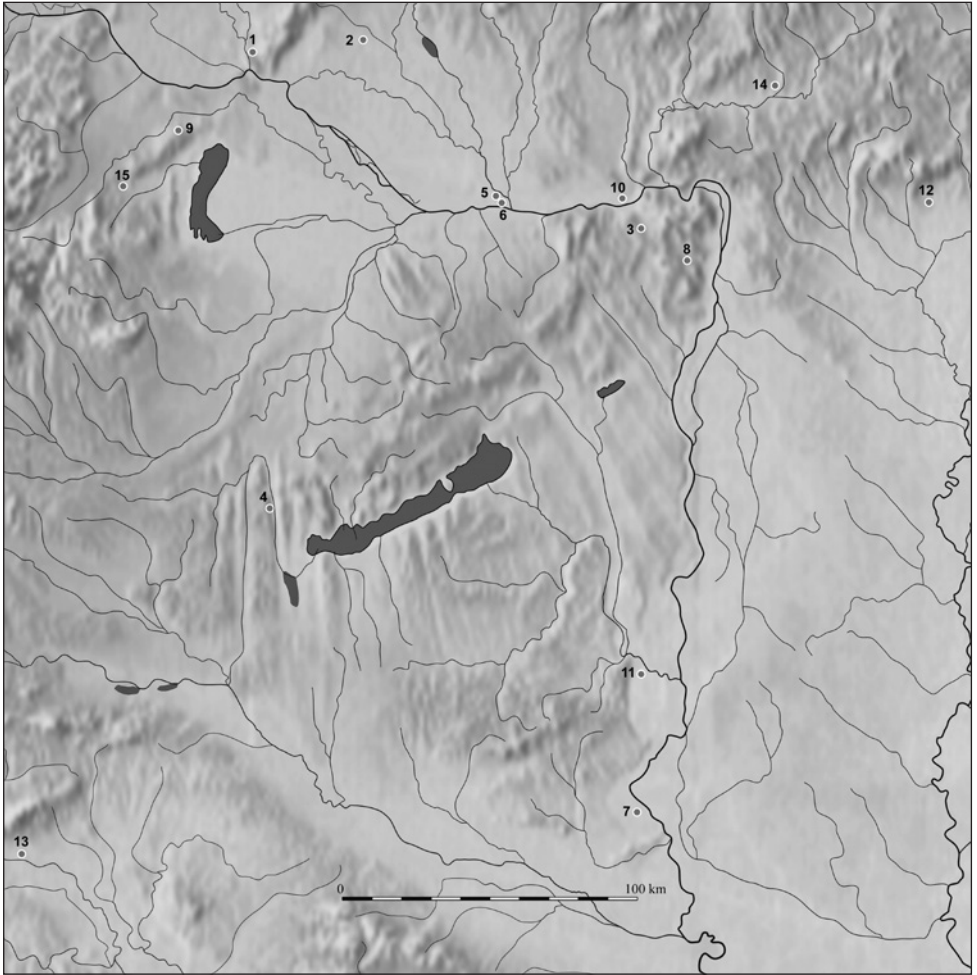
1. Berettyóújfalu–Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16.); 2. Gyenesdiás–Algyenes grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5.); 3. Igar–Vámszőlőhegy grave No. 111 (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14.); 4. Kisköre–Halastó grave No. 24 (Garam 1979, Abb. 3, 13, Taf. 8, Taf. 29/2.); 5. Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4.); 6. Košice–Barca grave No. 4 (Pástor 1954, 137; Tab. 1./1.); 7. Kunszállás–Fülöpjakab (Szentpéteri 1993, No. 397; Lezsák 2008, 44–45.); 8. Öskü–Agyaggödör grave No. 2 (Rhé – Fettesch 1931, 42–43.); 9. Želovce grave No. 818 (Čilinská 1973, 180, Taf. cxxx/12.); grave No. 820 (Čilinská 1973, 180, Taf. cxxx1/1.); 10. Zillingtal grave No. B-23 (Mehofer 2006, 162, Abb. B.)





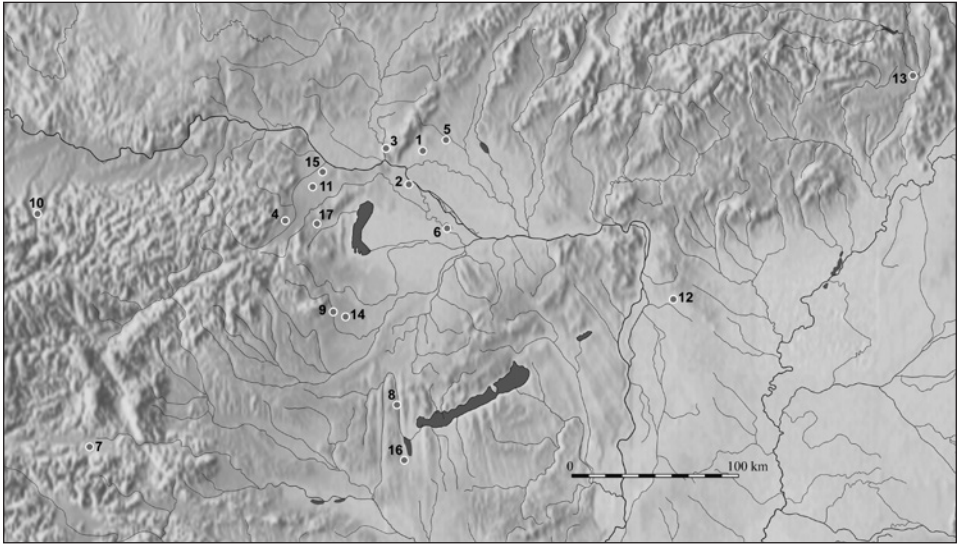
MAP 37 *Distribution of short and narrow seaxes (E.IV.A-B)*

1. Ártánd-Kapitány-dűlő grave No. 136 (Kralovánszky 1996, 52, 14. kép); 2. Budapest XIV. Zugló, Népstadion grave No. 5 (Nagy 1998, 109, 11. Taf. 84B/2.); 3. Dormánd–Hanyipuszta, stray find (Szabó 1966, 50, XIV. t. 7.); 4. Győr–Téglavető-dűlő grave No. 867 (XJM 53.278.102); Jászapáti–Nagyállás út grave No. 410 (Madaras 1994, 96, Taf. L/6.); 5. Kisköre–Halastó grave No. 23 (Garam 1979, 11–12, Taf. 7; Taf. 29/1.); 6. Kölked–Feketekapu A grave No. 29, 31 and 39 (Kiss 1996, 27, Taf. 24/1; 29, 228, Taf. 26/19); 7. Környe grave No. 18, 66 and 97 (Salamon – Erdélyi 1971, 15; 20, Taf. 9/19–21; 23.); 8. Nagyréde–Ragyogópart grave No. 9 (Szabó 1968, 40, VIII t. 11.); 9. Nošlac grave No. 25 (Rusu 1962, 276, Fig. 4/16.); 10. Štúrovo–Vojenské cvičisko grave No. 224 (Točík 1968b, 59, Taf. XLV/18.); 11. Štúrovo–Obid grave No. 8 (Točík 1992, 97–98, Obr. 61/22.); 12. Szekszárd–Bogyiszlói út grave No. 44 (Rosner 1999, 16, Taf. 4/3.)



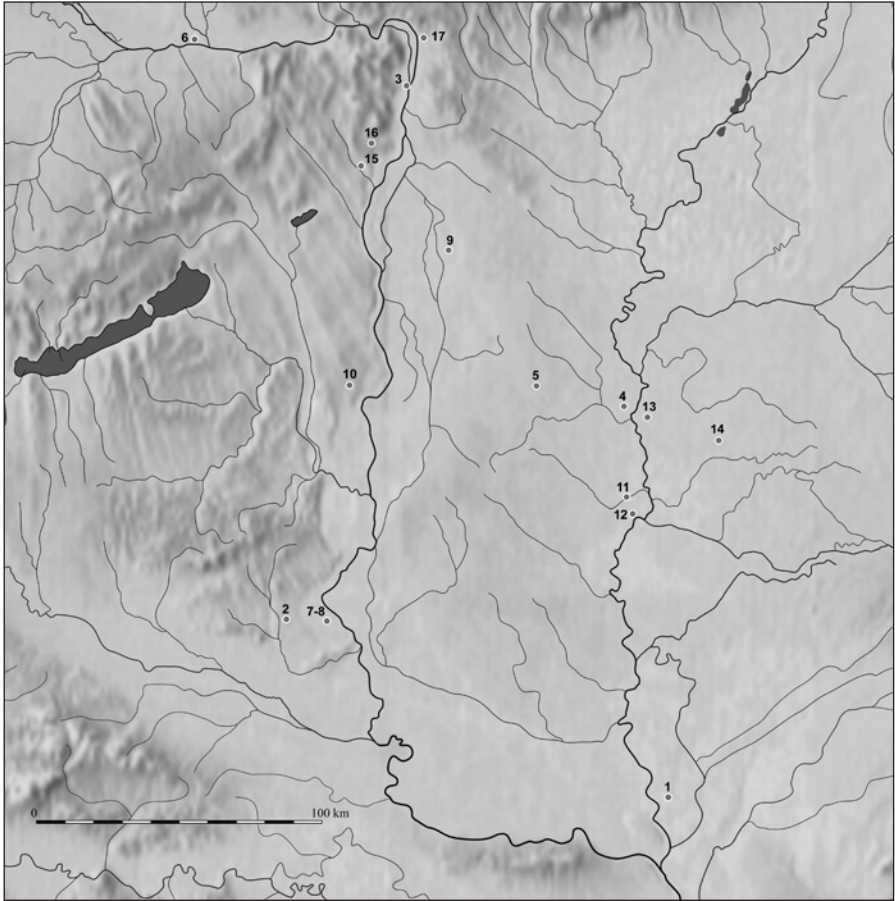
MAP 38 *Distribution of broad seaxes (E.IV.C)*

1. Bratislava-Devínska Nová Ves–A–Tehel'ňa grave No. 124 (Eisner 1952, 41–42, Obr. 19/5.);
2. Čataj I. – Zemanské–Gejzove grave No. 148 (Hanuliak – Zábójník 1982, 498.);
3. Csolnok–Szedres, Kenderföldek grave No. 7 (Erdélyi 1988, 193.);
4. Kehidakustyán–Kehida, Központi Tsz-major grave No. 10 (Szóke 2002, 77, 9/d.);
5. Komárno–6 Hadovce grave No. 24 (Čilinská 1982, 361; T. xvii/1.);
6. Komárno–8 Shipyard grave No. 78 (Trugly 1987, 268, Abb. 8, Taf. xx/6.);
7. Kölked–Feketekapu grave No. A-324 (Kiss 1996, 91–92, Taf. 68/12.);
8. Solymár–Dünyye-hegy grave No. 20 (Török 1994, 10, 31, Taf. Ix/1.);
9. Sommerein am Leithagebirge grave No. 74/A (Daim – Lippert 1984, 47, 231, Taf. 50/10.);
10. Štúrovo-Vojenské cvičisko grave No. 208 (Točík 1968b, 55, Taf. xlii/19.);
11. Szekszárd–Bogyiszlói út grave No. 350 (Rosner 1975–76, 881, v. t. 13; Simon 1991, 306; Rosner 1999, 49, Taf. 24/14.);
12. Visonta–Nagycsapás grave No. 74 (Nagy 1970, 56.);
13. Zagreb–Kurge, prudiste Strbca grave No. 4 (Vinski 1960, 52.);
14. Želovce grave No. 311 (Čilinská 1973, 91, Taf. Lii/23.);
15. Zillingtal grave No. D-451 (Daim 1998, 102, 108, Taf. 14/1.)



MAP 39 *Distribution of long seaxes (E.IV.D)*

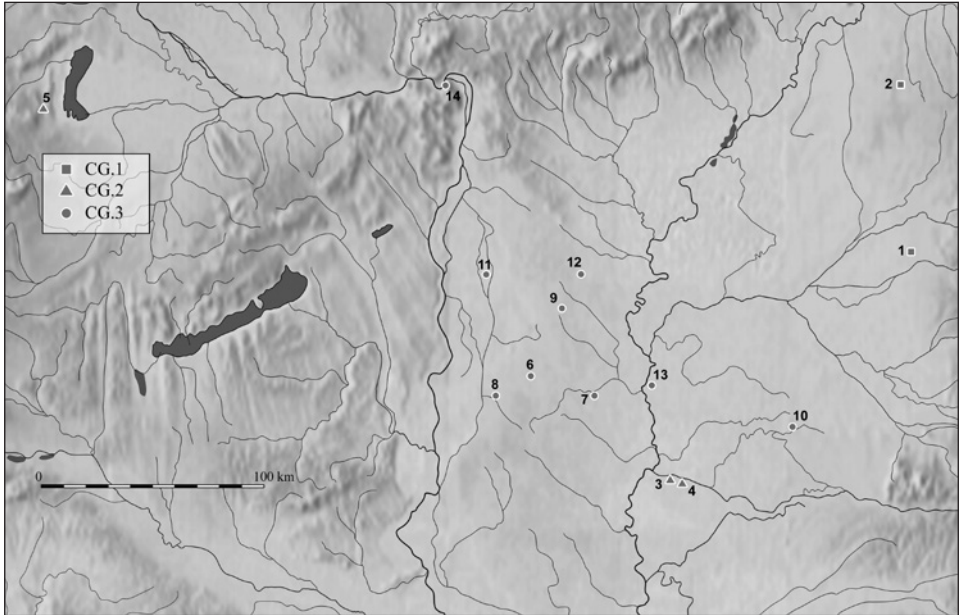
1. Bernolákovo–Sakoň grave No. 53 (Kraskovská 1962, 436–437, Obr. 11, Tab. XI/5.);
2. Bratislava–Čuňovo grave No. 127 (Hampel 1905, II, 158–159, III, Taf. 134.); 3. Bratislava–Devínska Nová Ves–A-Tehel'ňa grave No. 412 (Eisner 1952, 94–95, Obr. 47/1.); grave No. 524 (Eisner 1952, 119–120, Obr. 71/1.); grave No. 840 (Eisner 1952, 180, Obr. 85/1.); 4. Brunn a.d. Schneebergbau–Hochquellenwasserleitung (Daim 1979, 69; Zábojník 1995, No. 14; Winter 1997, 178–179, No. 3.); 5. Čataj I. – Zemanské–Gejzove grave No. 151 (Hanuliak – Zábojník 1982, 498.); 6. Dunaszeg (Hédervár)–Gyula-major (Lovas 1929a, 49; Fettich 1943, 7, Taf. XXXVIII. 1a-b.); 7. Grabelsdorf bei St. Kanzian am Klopeinersee (Szameit – Stadler 1993, 213–242, Abb. 2.); 8. Kehida–Fövényes (Szóke 2004, 372.); 9. Lukácsháza–Hegyalja dűlő grave No. 15, 45, 75 (courtesy by G. Kiss); 10. Micheldorf–Schottergrube grave No. 1 (Kaschnitz – Abramić 1909; Reitingner 1968, 504; ADAM, 240.); 11. Müchendorf grave No. 38 (Mitscha–Märheim 1941, 32, Taf. 17/10.); 12. Üllő II. –Vécési községhatár grave No. 77 (Sós 1955, 199, 214, Pl. LXIV, 13.); 13. Valalíky–Všechsvätých grave No. 42 (Pástor 1982, 307–308, Obr. 11/1.); grave No. 84 (Pástor 1982, 315, Obr. 16/1.); 14. Vasasszonyfa (Nagyasszonyfa) grave 'B' (MNM 8/1951.17); 2nd example (Kiss G. 1985, 15. tábla 4.); 15. Wien XXIII Zwölfaxing I. grave No. 3 (Lippert 1966, 116–117.); 16. Zalakomár–Lesvári dűlő grave No. 26A (Szóke 2002, 77. 9/a.); grave No. 89 (Szóke 2002, 82, 11.); grave No. 144 (Szóke 1982–83, 70–72; 1. kép; Szóke 2000, 494, Taf. 12.); grave No. 175 (Szóke 2002, 80, 12.); 17. Zillingtal grave No. D-372 (Daim 1998, 101, 108, Taf. 8/1.); grave No. D-418 (Daim 1998, 101–102, 109., Taf. 11/1.); grave No. D-469 (Daim 1998, 103, 109. Taf.17/1.)



MAP 40 *Distribution of edged weapons with ring-pendant on their hilt*

1. Aradac–Mečka grave No. 46 (*Nád* 1959, 59, *Tab. IX/11*; *Mrkobrad* 1980, 98, 152, *LXXIX/5*; *Simon* 1991, 286.);
2. Bóly–Sziebert puszta A, stray find (*Papp* 1962, 168., *XXVIII. b. 1.*);
3. Budakalász–Dunapart grave No. 458; 4. Csanytelek–Felgyői határút grave 'A' (*Kürti* 1979, 68; *Kürti* 1980, 1279–1280; *Kürti* 1983, 173, 28 kép; *Kürti* 1990, 79–80, 1. kép; *Simon* 1991, 289.);
5. Gátér–Vasútállomás grave No. 212 (*Kada* 1906, 215., 218., *c. rajz*; *Fettich* 1926a, 8., 10., *x. t. 27.*; *Simon* 1991, 292., 16. kép 20.);
6. Komárno–8 Shipyard grave No. 142 (*Trugly* 1993, 213–214, *Taf. L/4.*);
7. Kölked–Feketekapu A grave No. 227 (*Kiss* 1996, 69, *Taf. 52/8.*); grave No. 260 (*Kiss* 1996, 76, *Taf. 57/1.*);
8. Kölked–Feketekapu B grave No. 106 (*Kiss* 2001, 43–44, *Taf. 32/9.*);
9. Kunpeszér–Felsőpeszéri út grave No. 3 (*H. Tóth* 1984, 12; *Simon* 1991, 299.); grave No. 27 (*H. Tóth* 1984, 12; *Simon* 1991, 299.); grave No. 30/A (*H. Tóth* 1984, 12; *Simon* 1991, 299.);
10. Paks–Gyapa TO33. grave No. 12; 11. Szeged–Fehértó A grave No. 167 (*Madaras* 1995b, 32, *Pl. 19/10.*);
12. Szeged–unknown site (*Kürti* 1983, 173.);
13. Szegvár–Sáppoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; *Simon* 1991, 306, 10. kép 4, 16. kép 10; *Garam* 1992, 139–140, *Taf. 18.*);
14. Székkutas–Kápolna-dűlő grave No. 541 (*NAGY é.n.* (2003) 71, 194. kép 1.);
15. Tárnok (*Garam* 1991b, 222, 3. kép, 5 kép 2.);
16. Törökbálint 36/25. lh. grave No. 1 (*Kovrig* 1957, 119–120, *XVII. T. 1–2, XVIII. t. 1, 26. ábra*; *MRT* 7. 347–348; *Simon* 1991, 309, 16. kép 8.);
17. Vác–Kavicsbánya grave No. 301 (*Simon* 1991, 310; *Tettamanti* 2000, *Taf. 16/1.*)



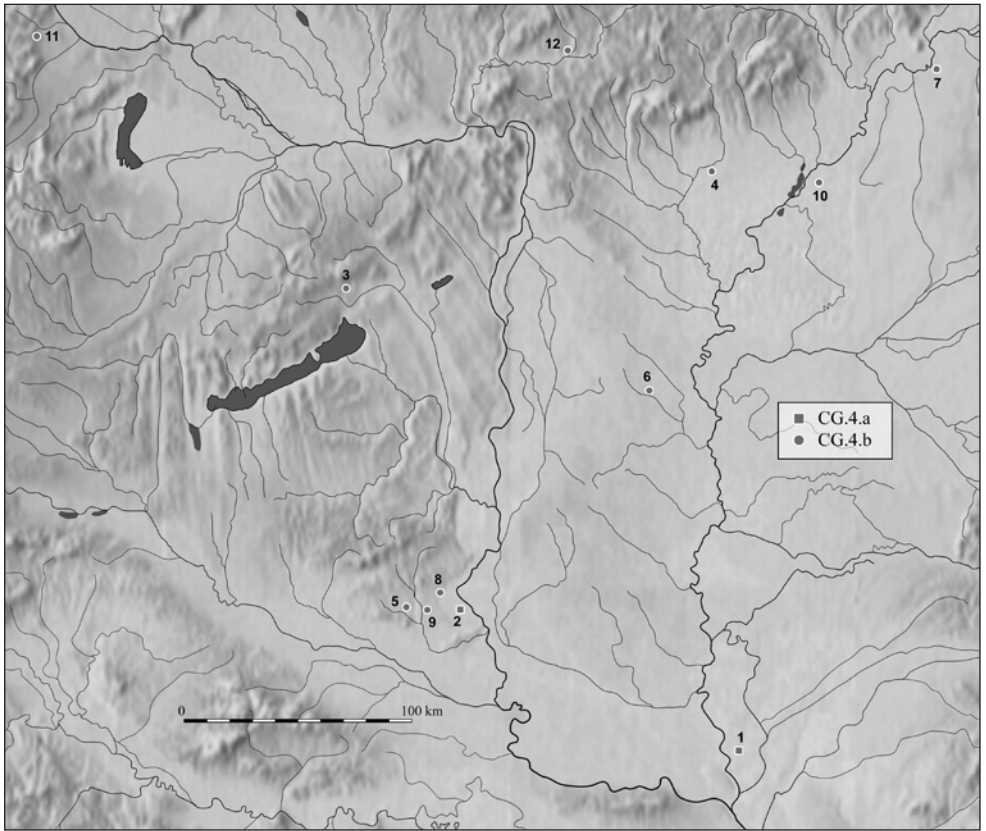


MAP 41 *Distribution of crossguards CG.1-3*

CG.1: 1. *Biharkeresztes-Lencsészát* (Mesterházy 1987, 222, 6. kép/1-2.); 2. *Újfehértó-Tálas dűlő* (Bóna 1986b, 80, 90, 292. j; Sipos 1987, 28, 30; Simon 1991, 310.)

CG.2: 3. *Deszk L grave No. 13* (H 22) (Csallány 1939, 137; Csallány 1972, 24-26, Abb. 4, Taf. VI-VII; Trogmayer 1984, 88, 12. lh; Simon 1991, 291, 11. kép 5, 18. kép; Lőrinczy 1994, 114-115.); 4. *Kiszombor E grave No. 29* (Csallány 1939, 137; Simon 1991, 295, 10. kép 5, 19. kép); 5. *Sopron-téglagyári agyagbánya* (Gömöri 1976, 144-145, 10. kép 3, 11. kép 3, 20. kép, 21. kép 2; Simon 1991, 304.)

CG.3: 6. *Bócsa* (Fettich 1937, 123, Taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228-230; Pl. XLIII/1, 11-12, Pl. XLIV-XLV/1-6; Simon 1991, 287; 15. kép 4; Garam 1993, 53-57, Taf. 4-21.); 7. *Csengele-Jó járt grave No. 1* (Csallány 1939, 9-11, I. tábla 3-3a; II. tábla; Simon 1991, 290, 15. kép 8.); 8. *Kecel-Schwacho föld* (László 1955, 232-233, Fig. 64, Pl. LI-LII, LIII/25; Biczó 1984, 27, 56, 15. ábra (térkép) 173. lh.; Simon 1991, 294, 15. kép 2.); 9. *Kecskemét-Sallai út* (H. Tóth 1980, 118, Abb. 4-6; Simon 1991, 294.); 10. *Kunágota* (László 1938; László 1950; László 1955, Pl. LIX/1; Bóna 1982-83, 88-89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137-138, Taf. 4-5.); 11. *Kunszentmiklós-Bábony grave No. 1* (H. Tóth - Horváth 1992, 32-34, Taf. V-VIII.); 12. *Nagykőrös-Szurdok* (Simon 1983, 9-43, 6-20. kép, II-VII. t.; Simon 1991, 302-303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép); 13. *Szegvár-Oromdűlő grave No. 335, 540 and 903*; 14. *Visegrád-Duna-meder* (Tavas 1978, 175-200; Simon 1991, 310-311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.)



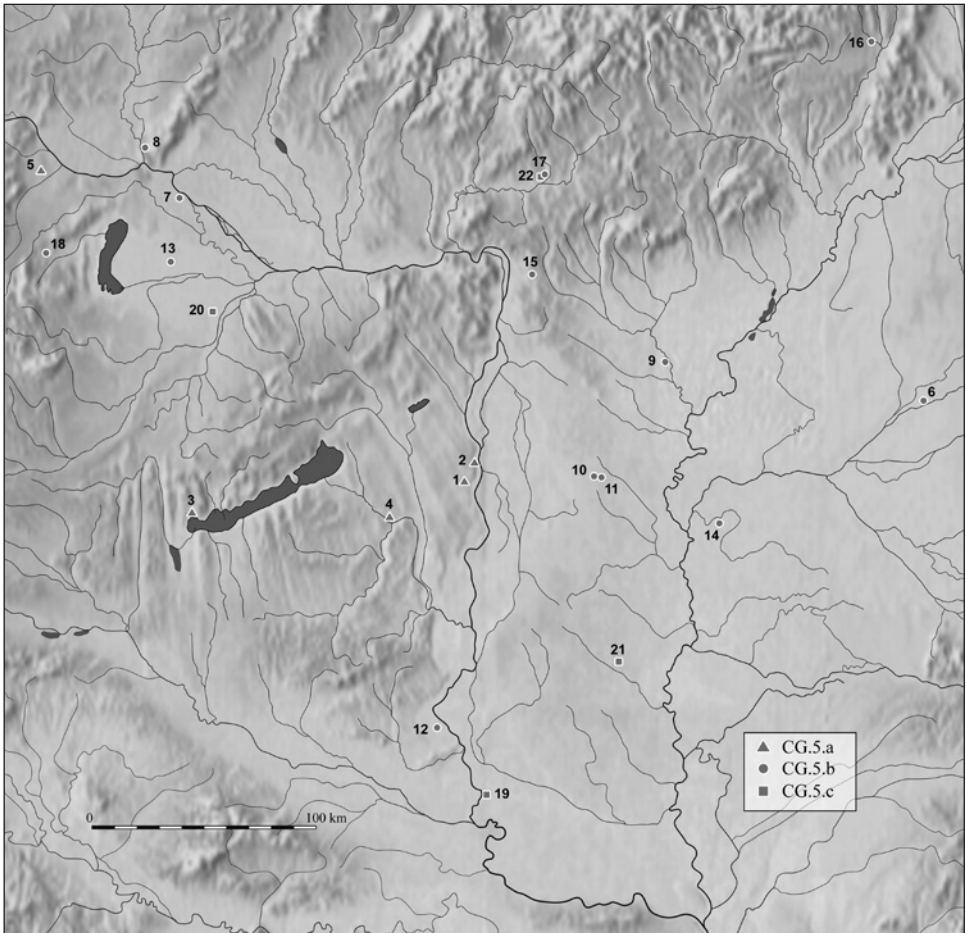
MAP 42 *Distribution of crossswords type CG.4*

*CG.4.a:* 1. Aradac–Mečka grave No. 85 (*Nađ* 1959, 62, *Tab. xxvii/1.*), 2. Kölked–Feketekapu A grave No. 259 (*Kiss* 1996, 75–76, *Taf. 57.*)

*CG.4.b:* 3. Óskü, grave No. 2 (*Rhé – Fettich* 1931, 42–43.); 4. Tarnaméra–Urak dűlő grave No. x (*Szabó* 1965, 42, *viii. t. 1–3;* *Simon* 1991, 307, *ii. kép 2.*)

*CG.4.c:* 5. Kiskassa–Téglaház (*Hampel* 1897, 144; *CXLVII;* *Hampel* 1905 *III. Taf. 276.*); 6. Kiskunfélegyháza–Pákapusztá (*László* 1955, 236, *LXIX. t. 23;* *Simon* 1991, 295; *Garam* 1991a, 143–144, *10. kép;* *Balogh* 2002, 307.); 7. Tiszaeszlár–Sinkahegy (*Csallány* 1960a, 33, *xvi. t. 4.*)

*CG.4.d:* 8. Babarc–Halastó grave No. 3 (*Kiss* 1977, *ii. Pl. LXI.A/1;* *Kiss* 1979a, 394.); 9. Bóly–Sziebert pusztá A, stray find (*Papp* 1962, 168, *xxviii.b.2.*); 10. Tiszafüred–Majoros grave No. 379 (*Garam* 1995, 52, *Taf. 177/1.*); 11. Wien XIII. Unter St. Veit, Spohrstrasse (*Daim* 1979, 63; *Taf. 7/2.*); 12. Želovce grave No. 27 (*Čilinská* 1973, 38, *Taf. IV/1.*); grave No. 175 (*Čilinská* 1973, 67, *Taf. xxxi/1.*); grave No. 843 (*Čilinská* 1973, 183, *Taf. cxxxiii/17.*)



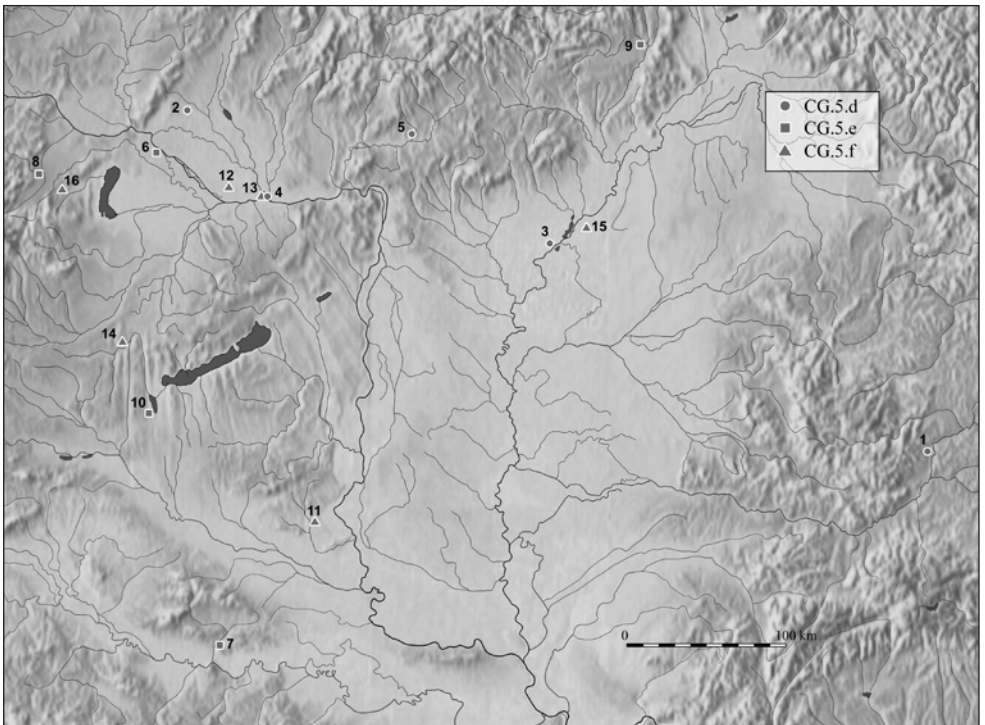
MAP 43 *Distribution of crossguards type CG.5 (CG.5.a-c)*

*CG.5.a:* 1. Baracs (Nagy 1901b, 285, Hampel 1905, I. 196–197, 470–471. kép, II. 628–629; Hampel 1907, 109–110.); 2. Dunaiújváros–Öreghegy grave No. 7 (Hekler 1909, 97–105; Fettich 1926a, 27–28; Marosi – Fettich 1936, 9–17, Taf. I–VI; Bóna 1970, 250, 3–8; Bóna 1971a, 249–250 (33–34), 271 (51); Bóna 1982–83, 62–64, No. 20a-d, Taf. 27–28, 35,9; Garam 1994–95, 134, 8. kép), 3. Gyenesdiás grave No. 64 (Müller 1989, Abb. 2, 143–147, Abb. 3–5.), 4. Igar, grave No. III (Marosi 1931, 6–7; Fülöp 1987, 17, 8. ábra; Fülöp 1988, 167–168, Abb. 14.); 5. Wien–Liesing, grave No. 1 (Mossler 1948, 220.)

*CG.5.b:* 6. Berettyóújfalu – Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16.); 7. Bratislava–Čunovo grave No. 127 (Hampel 1905, II. 158–159, III. Taf. 134.); 8. Bratislava–Devínska Nová Ves–A-Tehel'ňa grave No. 842 (Eisner 1952, 181–182, Obr. 89/1.); 9. Jánoshida–Tótképuszta grave No. 125 (Erdélyi 1958, 25, XLIV. t. 1.); 10. Kecskemét–Miklóstelep (Kada 1896, 153–154; Hampel 1897, 46; Hampel 1905, II. 379–380. III. Taf. 277.); 11. Kecskemét–Nyíri erdő (Hampel 1897, I. 46–47.); Kecskemét–Nyíri erdő (Hampel 1897, 47.); 12. Kölked–Feketekapu B grave No. 210 (Kiss 2001, 94–95, Taf. 64/15.); 13. Mosonszentjános–Kavicsbánya grave No. 27 (Fettich 1927, 166–168, V/2.); Mosonszentjános–Kavicsbánya grave No. 31 (Fettich 1927, 168; VII/13.); 14. Szentés–Kaján

grave No. 33 (Korek 1943, 6, XLIV. t. 7.); 15. Váchartyán–Gosztonyi szőlőhegy, stray find (Ferenczy 1963, 101, 14 kép 3.); 16. Valalíky–Všechvátých grave No. 24 (Pástor 1961, 378–379, 362, Obr. 153.); 17. Želovce grave No. 30 (Čilinská 1973, 39, Taf. VI/19.); 18. Želovce grave No. 170 (Čilinská 1973, 66, Taf. XXX/12.); Želovce grave No. 312 (Čilinská 1973, 91–92, Taf. LIII/11.); Želovce grave No. 818 (Čilinská 1973, 180, Taf. CXXX/12.); Želovce grave No. 820 (Čilinská 1973, 180, Taf. CXXXI/1.); 18. Zillingtal grave No. B-23 (Mehofer 2006, 162., Abb. B.)

CG. 5.c: 19. Apatin–Dunavska u. (Dimitrijević – Kovačević – Vinski 1962, 34, Abb. 4; Mrkobrad 1980, 98., 155, CXXXVIII/5.); 20. Bágyog–Gyúrhegy grave No. 8 (Lovas 1929b, 255–257; Fettich 1943, 7.); 21. Szeged–Átokháza (Csallány 1946–48, 350–352.); 22. Želovce grave No. 335 (Čilinská 1973, 97, LVII/1.)



MAP 44

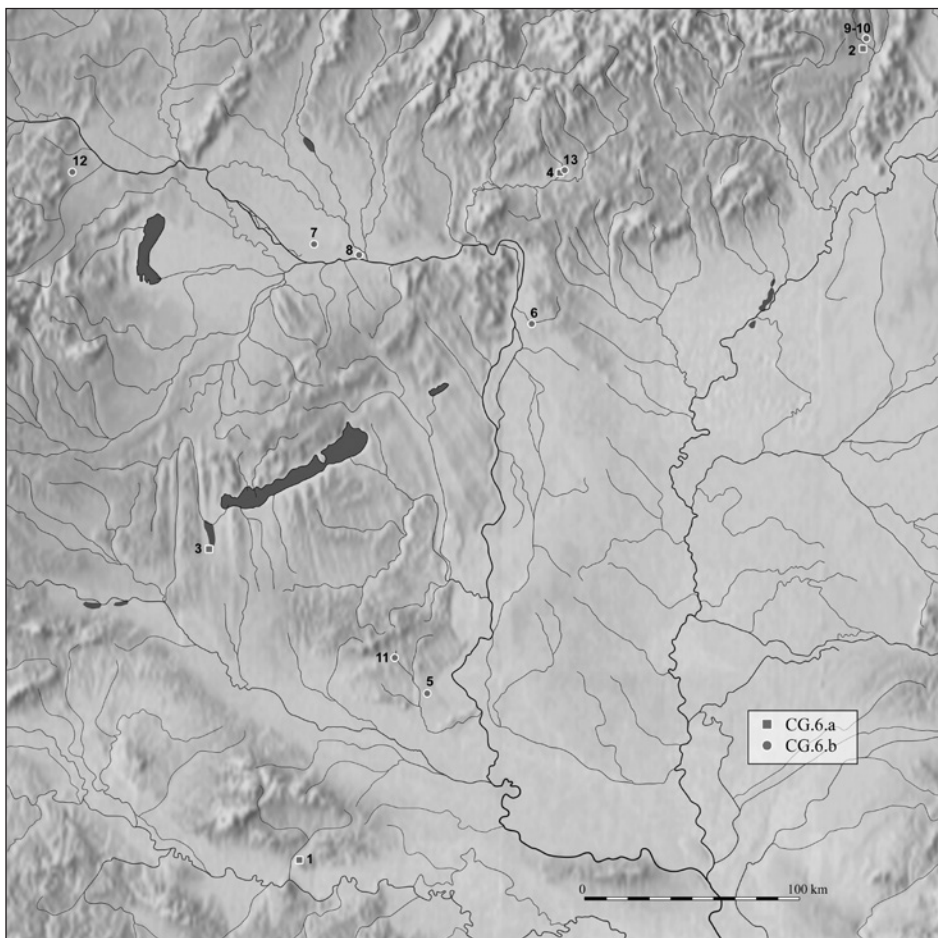
*Distribution of crossguards type CG.5 (CG.5.d-f)*

CG.5.d: 1. Aiudul de Sus (Horedt 1956, 396; Horedt 1958a, 93, Fig.17/3; Horedt 1968, 71; Bóna 1986a, 116; Bóna 1989, 88.); 2. Čataj I. – Zemanské-Gejzove grave No. 60 (Hanuliak – Zábajník 1982, 498; Zábajník 1995, No. 17, Abb. 4.); 3. Kisköre–Halastó grave No. 32 (Garam 1979, 13–15, Taf. 9, Taf. 29/3.); 4. Komárno–8 Shipyard grave No. 30 (Trugly 1987, 256, Abb. 3; Taf. v/6.); Komárno–8 Shipyard grave No. 71 (Trugly 1987, 265, Taf. xv/15.); Komárno–8 Shipyard grave No. 72 (Trugly 1987, 265–266, Taf. xvi/17.); 5. Želovce grave No. 1 (Čilinská 1973, 34, Taf. I. szablya; Taf. 1/1.); Želovce grave No. 44 (Čilinská 1973, 42, Taf. VIII/21.); Želovce grave No. 167 (Čilinská 1973, 65, Taf. XXIX/1.); Želovce grave No. 442 (Čilinská 1973, 115, Taf. LXXIV/26.)

CG.5.e: 6. Bratislava–Čuňovo grave No. 54 (Hampel 1905, II. 148, 150; III. Taf. 126; Fettich 1927, v/1.); 7. Brodski Drenovac–Plana grave No. 14 (Vinski–Gasparini –



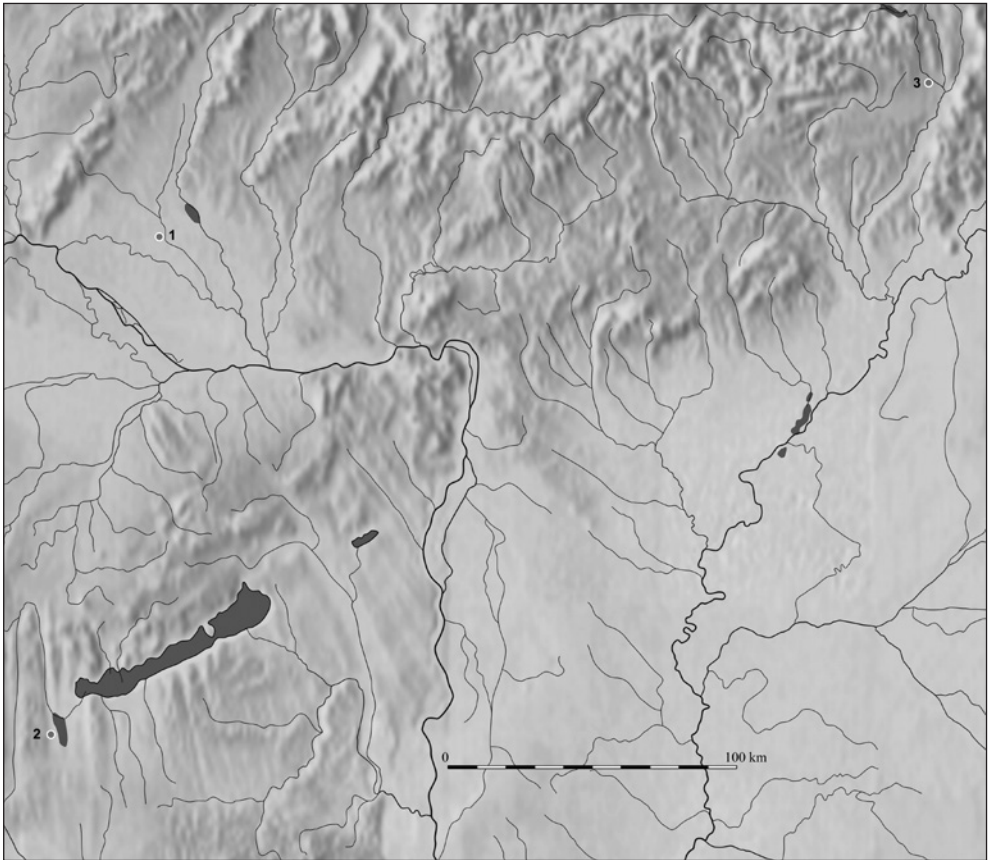
*Ercegović 1958, 144–145., 156., Tabl. XIV.156.); 8. Leobersdorf–Ziegelei Polsterer grave No. 71 (Daim 1987, 241; Taf. 68/3.); 9. Valalíky–Všechsvätých grave No. 85/83; 10. Zalakomár–Lesvári dűllő grave No. 135 (Szóke 2002, 80, 14.); Zalakomár–Lesvári dűllő grave No. 210 CG.5.f; 11. Bóly–Sziebert puszta A, stray find (Papp 1962, 168, xxVIII. b. 1.); 12. Holiare grave No. 484 (Točík 1968a, 78, Taf. LXX/1.); 13. Komárno–8 Shipyard grave No. 107 (Trugly 1993, 196–197, Taf. XIII/8.); 14. Pókaszepetk–Mesterföldek, Avar utca grave No. 415 (Sós – Salamon 1995, 182–183, Pl. XXVII.); 15. Tiszafüred–Majoros grave No. 946 (Garam 1995, 112, Abb. 45, Taf. 186.); 16. Zillingtal grave No. D-330 (Mehofer 2006, 162., Abb. C.)*



MAP 45 *Distribution of crossguards type CG.6*

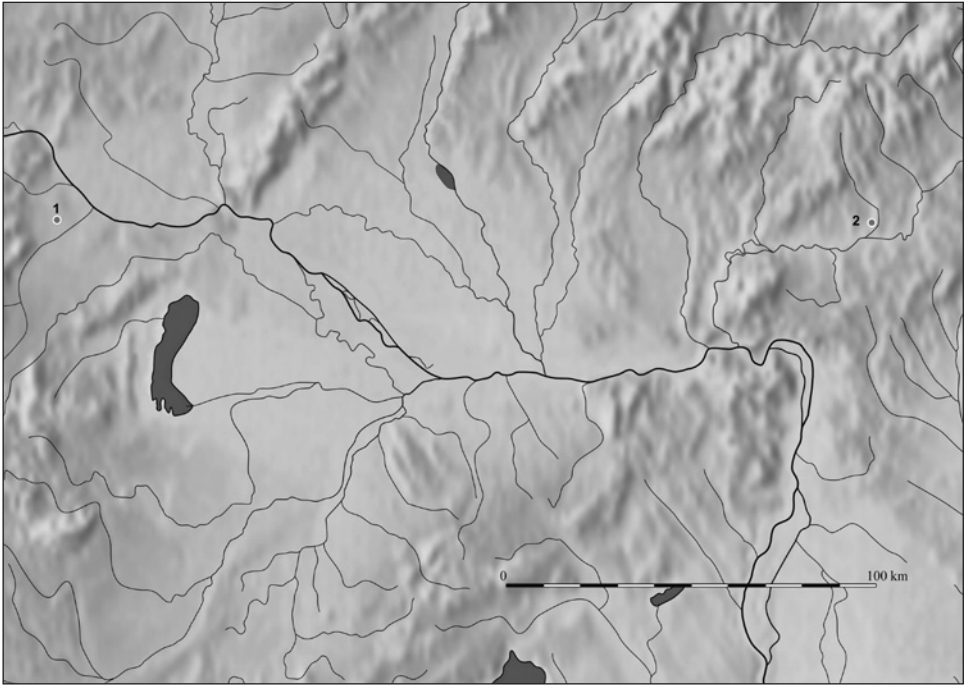
*CG.6.a: 1. Brodski Drenovac–Plana grave No. 19 (Vinski–Gasparini – Ercegović 1958, 144–145., 157. Tabl. XV/4.); 2. Košice–Šebastovce grave No. 94 (Budinský–Krička – Točík 1984, 174, Obr. 1.; Obr. 4–5; Budinský–Krička – Točík 1991, 25–26, Taf. XI/7.); 3. Zalakomár–Lesvári dűllő grave No. 505 (Szóke 2002, 80, 13.); 4. Želovce grave No. 175 (Čilinská 1973, 67, Taf. XXXI/1.)*

CG.6.b: 5. Bóly–Sziebert puszta A grave No. 20 (Papp 1962, 174–175., XXVIII. t. 3.); 6. Budapest x. Rákos, Ejtőernyőstorony grave No. 1 (Nagy 1998, I. 69., II. Taf. 54 A, Taf. 152/1a-b.); 7. Holiare grave No. K11 (Kovrig 1948, 120–121; Zábójník 1995, 284.); Holiare grave No. 375 (Točík 1968a, 66, Taf. LXIII/15.); 8. Komárno–8 Shipyard grave No. 139 (Trugly 1993, 211–212, Taf. XLVII/13.); Komárno–8 Shipyard grave No. 142 (Trugly 1993, 213–214, Taf. L/4.); 9. Košice–Barca grave No. 4 (Pástor 1954, 137; Tab. I./1.); 10. Košice–Šebastovce grave No. 221 (Budinský-Krička – Točík 1991, 46–47; Taf. XXVIII/17.); Košice–Šebastovce grave No. 254 (Budinský-Krička – Točík 1991, 55–56, Taf. XXXVI–XXXVIII.); 11. Romonya I. grave No. 41 (Kiss 1977, 112–113., Pl. XLVII/10.); 12. Vösendorf grave No. 715 (Sauer 2007, 94–95.); 13. Želovce grave No. 27 (Čilinská 1973, 38, Taf. IV/1.); Želovce grave Nr 79 (Čilinská 1973, 49, Taf. xv/1.)

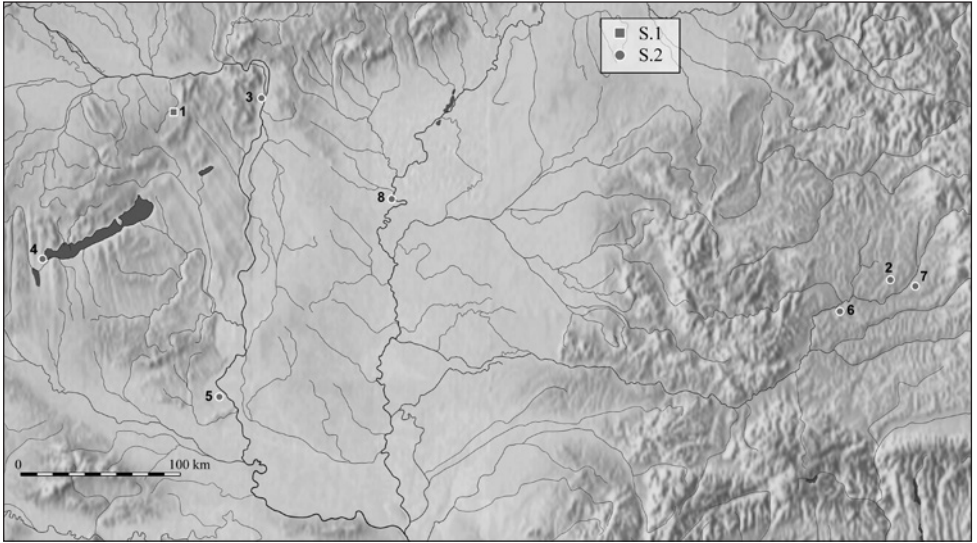


MAP 46 *Distribution of crossquard type CG.7*

1. Čierny Brod I. grave No. 2 (Čilinská – Točík 1978, 46; Točík 1992, 9–12, Obr. 7; Zábójník 1995, No. 19.); 2. Garabonc-Ófalu I. grave No. 55 (Szóke 1992a, 93.), 3. Košice–Šebastovce grave No. 230 (Budinský-Krička – Točík 1991, 49, Taf. xxx1/8.)

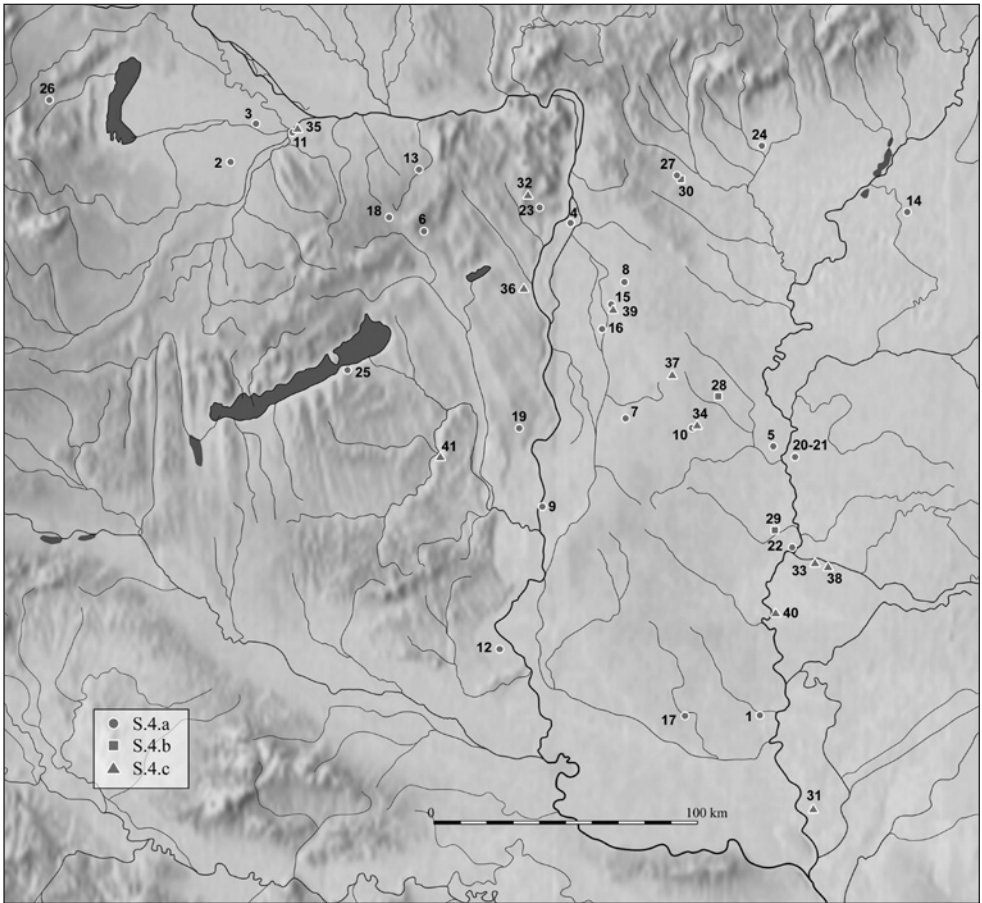


MAP 47 *Distribution of spatha-crossguards of the 8th century*  
1. Wien–XXIII. Liesing grave No. 3 (Mossler 1948, 222.); 2. Želovce grave No. 124 (Čilinská 1973, 57, Taf. XXII/16.)



MAP 48 *Distribution of one-point suspension in Early Avar Period*  
 Suspension slide with animal heads: 1. Környe, grave No. 97 (Salamon – Erdélyi 1971, 23, Taf. 15/31–32.)  
 Pyramid-shaped buttons: 2. Band (Kovács 1913, 317.); 3. Budakalász–Dunapart grave No. 1140 (Vida 2000, 169.); 4. Keszthely–Fenekpuszta, Pusztaszentegyházi dűllő (Müller 1999/2000, 345, Abb. 4.1, Abb. 5.1.) 5. Kölked–Feketekapu grave No. A-142 (Kiss 1996, 53, 228, Taf. 455/12.); grave No. A-230 (Kiss 1996, 69., Taf. 52/4–5.); grave No. B-82 (Kiss 2001, 27–28, II. Taf. 28/10, 12.); grave No. B-132 (Kiss 2001, 65–66, Taf. 41/7–8.); grave No. B-336 (Kiss 2001, 115–117, Taf. 75/13.); 6. Noşlac grave No. 6 (Rusu 1962, 275.); 7. Târgu Mureş grave No. I (Kovács 1915, 278–279, 36. kép/1.) 8. Tiszavárkony–Hugyîn-part grave No. 20 (Kiss 1962, 18–19. XIV. t. 2, XXXVII. t. 3; Simon 1991, 308.)





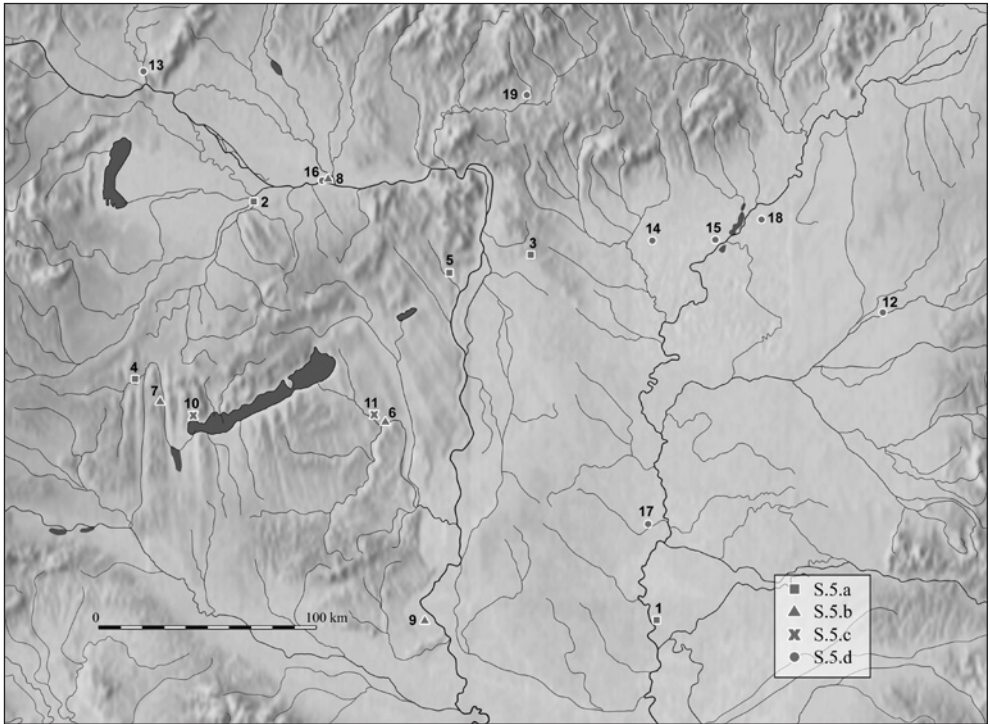
MAP 49 *Distribution of P-shaped suspension loops*

*S.4.a*: 1. Bačko Petrovo Selo–Čik grave No. 28 (Brukner 1968, 172, T. LIX/1; Simon 1991, 289, 16. kép 11; ADAM, 30; Bugarski 2009, 39, 116–117, Fig. 102, T. VI.); 2. Bányog–Gyűrhegy grave No. 2 (Lovas 1929b, 253; Fettich 1943, 7; Simon 1991, 286.); 3. Börcs-Nagydomb grave No. 10 (Tomka 2005, 155–160.); 4. Budapest XXI. Csepel–Kavicsbánya (Fettich 1926b, 2, Pl. V/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1.5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, No. 11, 59–60, Taf. 25; Nagy 1998, 1. 178–180.); 5. Csanytelek–Felgyői határút grave 'A' (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lőrinczy – Szalontai 1993, 282, Taf. VII.); 6. Csákberény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290.); 7. Csengőd–Páhipuszta, Kenyérvágóhalom (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40.); 8. Dabas (Gyón)–Páphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6; 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195.); 9. Fajsz–Garadomb grave No. 2 (Balogh – Kőhegyi 2001, 333–363.), 10. Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218. és c. rajz; Fettich 1926a, 8, 10, x. t. 27; Simon 1991, 292, 16. kép 20.); Gátér–Vasútállomás, stray find (Fettich 1926a, 8, Fig. 20; Simon 1991, 292.); 11. Győr–Téglavető–

dúló grave No. 756 (Börzsönyi 1908, 210–211.); 12. Kölked–Feketekapu A grave No. 107 (Simon 1991, 295; Kiss 1996, 41, 232, Taf. 34/1.); 13. Környe grave No. 75 (Salamon – Erdélyi 1971, 20, Taf. 10; Simon 1991, 296.); grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 16, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 26, Taf. 32/3; Simon 1991, 297, 16. kép 18.); 14. Kunmadaras–Újvárosi temető (Hampel 1905, II. 362; Bóna 1982–83, 115–117, II. kép 1–4; Simon 1991, 299, 16. kép 15.); 15. Kunpeszér–Felsőpezséri út grave No. 3 (H. Tóth 1984, 12; Simon 1991, 299.); grave No. 8, 9, 27, 30/A; 16. Kunszentmiklós–Bábonny grave No. 2 (H. Tóth 1972b, 51; H. Tóth 1984, 10; Simon 1991, 300; H. Tóth – Horváth 1992, 59–60, Taf. XXXIII.), 17. Mali Idoš grave No. 72 (Gubitz 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301, 16. kép 16.); 18. Mór–Akasztódomb grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302.); 19. Paks–Gyapa TO33. grave No. 12; 20. Szegvár–Oromdúló grave No. 815 and 900; 21. Szegvár–Sápoldal (Bóna 1979, 5, 8, 3. kép 1; Bóna 1980, 48–52; Simon 1991, 306, 10. kép 4, 16. kép 10; Garam 1992, 139–140, Taf. 18.); 22. Tápé-85. számú kútkörzet grave No. 11 (Simon 1993b, 31–34, 1–6. képek); 23. Törökbálint 36/25. site, grave No. 1 (Kovrig 1957, 119–120, XVII. T. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8.); grave No. 2 (Kovrig 1957, 120, XIX. t. 27–29; MRT 7. 347–348; Simon 1991, 310.); 24. Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343, Fig. 6/1, 16; Simon 1991, 311, 16. kép 9.); 25. Zamárdi–Réti földek III. (Simon 1991, 311.); 26. Zillingtal grave No. D-3 (Mehoffer 2006, 163, Abb. D.); 27. Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14.)

S.4.b: 28. Kiskunfélegyháza–Pákapuszta (László 1955, 236, LXIX. t. 23; Simon 1991, 295; Garam 1991a, 143–144, 10. kép; Balogh 2002, 307.); 29. Szeged–Fehértó A grave No. 26 (Csallány 1939, 137; Madaras 1981, 35, 3. t.; Simon 1991, 305; Madaras 1995b, 17, Pl. 4/14.); Szeged–Fehértó A grave No. 34 (Madaras 1995b, 18, Pl. 6/11.); 30. Zsámbok grave No. 2 (Garam 1983, 144, Abb. 5/7; 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.)

S.4.c: 31. Aradac–Mečka grave No. 31 (Nađ 1959, 58, Tab. VIII/1; Dimitrijević – Kovačević – Vinski 1962, 10, Abb. 4; Mrkobrad 1980, 98, 152, LXXIX/6; Simon 1991, 286.); 32. Biatorbágy–Hosszúrétek grave No. 35 (Horváth – Reményi – Tóth 2004, 30–31, 7–8. kép); 33. Deszk G grave No. 8 (Csallány 1939, 127, 129, I. t. 2–2a, 2. kép 2–2a; Simon 1991, 291; 16. kép 6, Lőrinczy 1994, 113–114.); 34. Gátér–Vasútállomás, stray find (Fettich 1926a, 7; Pl. x/24–24a; Simon 1991, 292, 16. kép 1–2.); 35. Győr–Téglavető-dúló grave No. 755 (Börzsönyi 1906, 320–321; Fettich 1943, 38–39, XIV.); 36. Iváncsa–Szabadság utca 20. (Bóna 1970, 243; 251. 8/5.); 37. Kecskemét–Ballószög–Karácsonyi szőlő grave No. 1 (Szabó 1939, 185–187, Taf. I, Abb. 1.); 38. Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 39. Kunpeszér–Felsőpezséri út grave No. 27 (H. Tóth 1984, 12; Simon 1991, 299.); 40. Novi Kneževac (Hampel 1900, 170–175; Hampel 1905, 357–360; Vinski 1958, II. tab. IV. 1–12; Dimitrijević – Kovačević – Vinski 1962, 23, Abb. 3; Mrkobrad 1980, LXXIX/1; Simon 1991, 303, 16. kép 4.); 41. Szarazd (Fettich 1926a, 7, x. t. 1; Bóna 1982–83, 126–127, II. j.; Simon 1991, 305, 16. kép 3; Kovács 2001, 185, 187–190; 7. kép 10.)



MAP 50 *Distribution of semicircular or D-shaped suspension loops (S.5)*

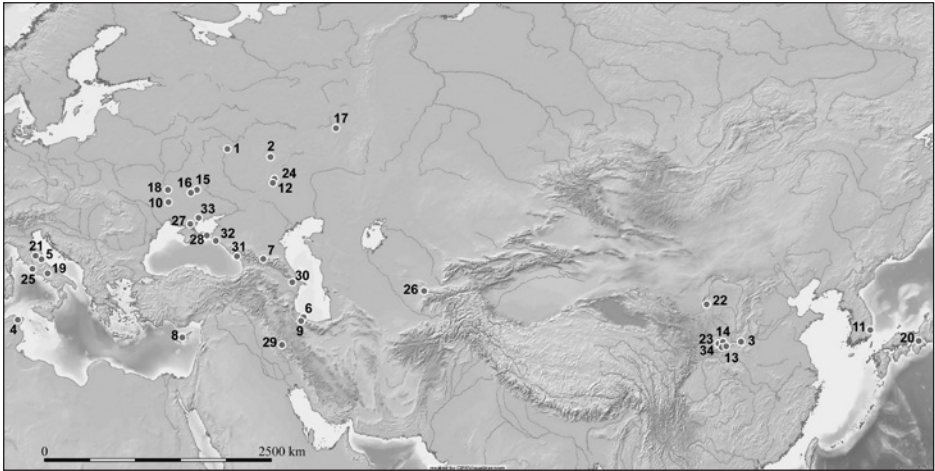
*S.5.a:* 1. Čoka–Kremenjak grave Nr. 45 (László 1943, 66–78; Kovrig – Korek 1960, 262, Fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50., Abb. 9, B, 2; Mrkobrad 1980, 98., 152., LXXIX/7; Simon 1991, 289.); 2. Győr–Téglavető-dűlő grave Nr. 58 (Fettich 1943, 12, 16.); 3. Maglód–Kertváros (Garam 2005, 414, 9–10. kép, 427–428.); 4. Pókaszepetk–Mesterföldek, Avar utca grave Nr. 332 (Sós – Salamon 1995, 166–167., Pl. xx.); 5. Tárnok (Garam 1991b, 222, 3. kép, 5 kép 2.)

*S.5.b:* 6. Igar–Vámszőlőhegy, Petőfi u. 56. find 'III' (Marosi 1931, 6–7; Fülöp 1987, 17., 8. ábra; Fülöp 1988, 167–168., Abb. 14.); 7. Kehidakustyán–Kehida, Központi Tsz-major grave Nr. 61 (Szőke 2002, 75., 11.); 8. Komárno–8. Shipyard grave Nr. 128 (Trugly 1993, 206., Taf. XXXV/1.); Komárno–8 Shipyard grave Nr. 131 (Trugly 1993, 207–209., Taf. XL/5.); 9. Kölked–Feketekapu B grave Nr. 210 (Kiss 2001, 94–95, Taf. 64/15.)

*S.5.c:* 10. Gyenesdiás–Algyenes grave Nr. 64 (Müller 1989, Abb. 2., 143–147, Abb. 3–5.); 11. Ozora–Tótipusztá grave Nr. 1 (Wosinsky 1896, 1000–1008., Taf. 252–254; Hampel 1897. 11. LV–LVII. táblák; Hampel 1905 III. Taf. 268.; Bóna 1982–83, 104–109; Garam 1992, 145–146. Taf. 61, Taf. 62/8.)

*S.5.d:* 12. Berettyóújfalu – Nagy Bócs-dűlő (Dani – Szilágyi – Szelekovszky – Czifra – Kisjuhász 2006, 16.); 13. Bratislava–Devínska Nová Ves–A–Teheľňa grave Nr. 79 (Eisner 1933, tab. 91/1; Eisner 1952, 25, Obr. 13/1); 14. Jászapati–Nagyállás út grave Nr. 76 (Madaras 1994, 32., 137, Taf. XI/5.); 15. Kisköre–Halastó grave Nr. 32 (Garam 1979, 13–15, Taf. 9., Taf. 29/3.); 16. Komárno–8 Shipyard grave Nr. 139 (Trugly 1993, 211–212, Taf. XLVII/13.); 17. Szeged–Fehértó A grave Nr. 159 (Madaras 1995b, 31; Pl. 20/8.); Szeged–Fehértó B grave Nr. 29 (Csallány 1946–48, 352–353; Madaras 1995b, 140, Pl. 5/17.); Szeged–Fehértó B grave

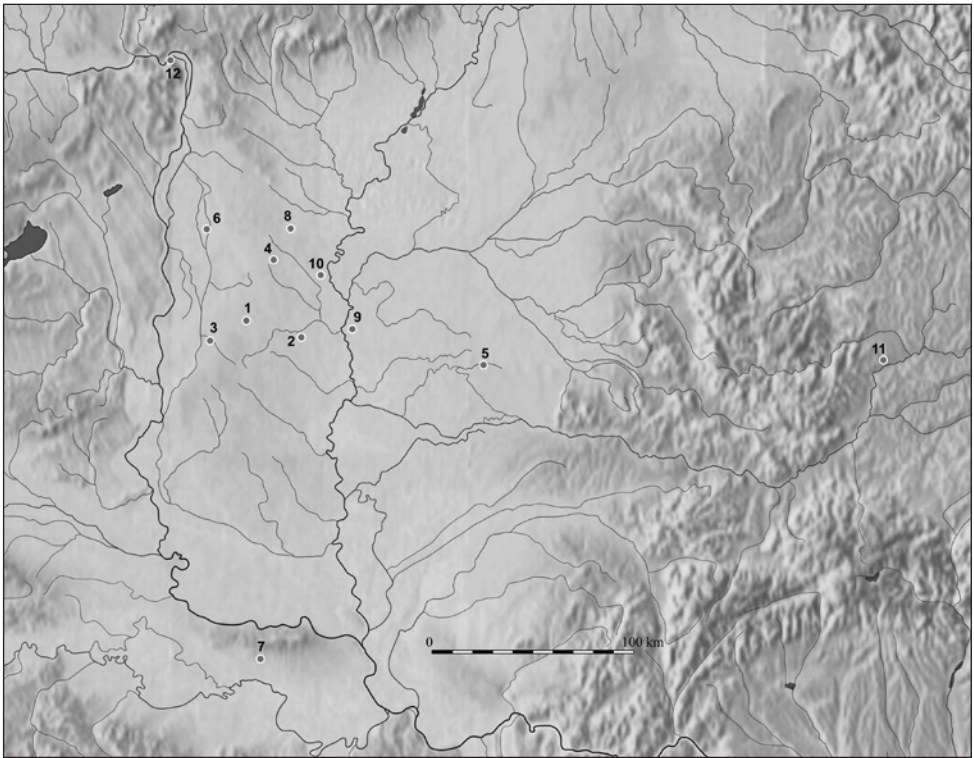
Nr. 113 (*Madaras 1995b, 148., Pl. 19/9.*); 18. *Tiszafüred–Majoros grave Nr. 186 (Garam 1995 28–30, Abb. 11., Taf. 73. kard: Taf. 174/10.)*; *Tiszafüred–Majoros grave Nr. 257 (Garam 1995, 37, Taf. 177/1.)*; *Tiszafüred–Majoros grave Nr. 326 (Garam 1995, 46. Abb. 19; 47, Taf. 177/2.)*; *Tiszafüred–Majoros grave Nr. 496 (Garam 1995, 65, Abb. 27., Taf. 179/2.)*; 19. *Želovce grave Nr. 44 (Čilinská 1973, 42, Taf. VIII/21.)*; *Želovce grave Nr. 167 (Čilinská 1973, 65, Taf. XXIX/1.)*; *Želovce grave Nr. 820 (Čilinská 1973, 180, Taf. CXXXI/1.)*



MAP 51 *Distribution of P-shaped suspension loops*

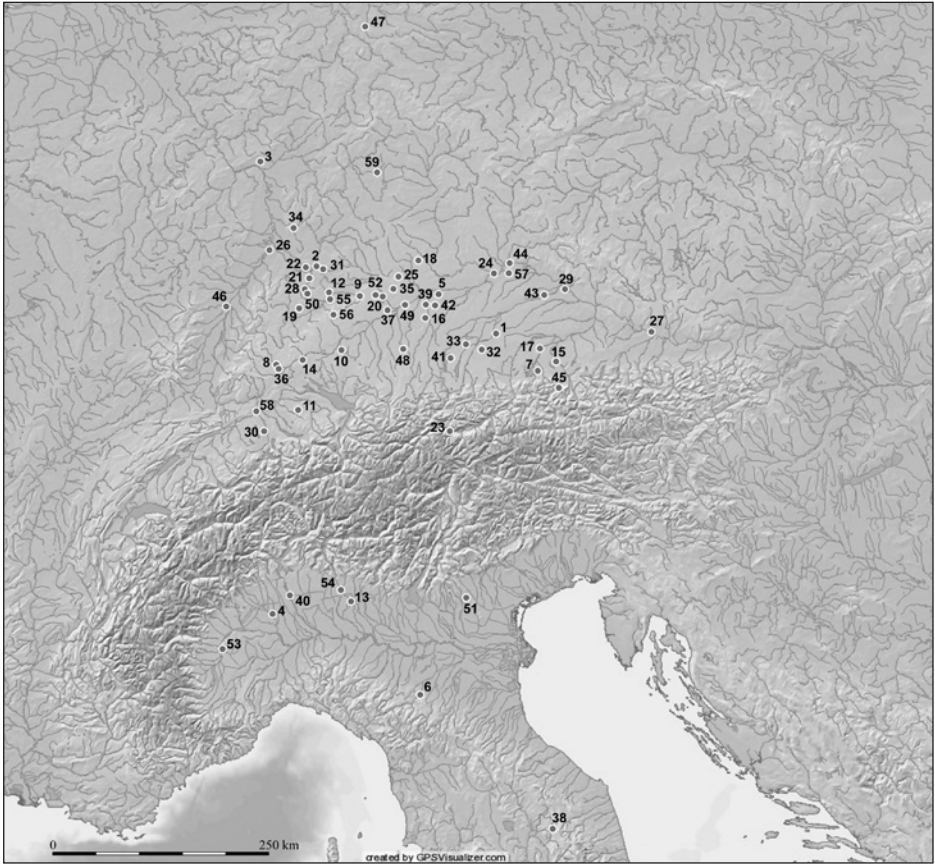
1. *Arcybashevo (Ambroz 1986b, No. 17; Bálint 1993, 29.)*; 2. *Armievo (Ambroz 1986b, No. 14; Bálint 1993, 30.)*; 3. *Beijueshan*; 4. *Borisovo (Ambroz 1986b, No. 9; Bálint 1993, 31.)*; 5. *Borovoe (Ambroz 1986b, No. 18; Bálint 1993, 32.)*; 6. *Carthage*; 7. *Castel Trosino*; 8. *Cheragh Ali tepe*; 9. *Chmi (Ambroz 1986b, No. 16; Bálint 1993, 33.)*; 10. *Cyprus, David plate (Nicosia)*; 11. *Daylaman, Iran; Djurso (Bálint 1993, 35.)*; 12. *Glodosy (Ambroz 1986b, 24; Bálint 1993, 36.)*; 13. *Cyeogju, Kerim Lo*; 14. *Ilovatka (Ambroz 1986b, No. 10; Bálint 1993, 37.)*; 15. *Jiemin*; 16. *Li Ji*; 17. *Livencovka VII. kurgan No. 35 (Bezuglov – Iljukov 2007, 47.)*; 18. *Mala Pereščepino (Ambroz 1986b, No. 32; Bálint 1993, 41.)*; 19. *Maniak (Ambroz 1986b, No. 30; Bálint 1993, 42.)*; 20. *Martinovka (Ambroz 1986b, No. 6; Bálint 1993, 43.)*; 21. *Morrione*; 22. *Nara, Shosoin treasure*; 23. *Ningxia*; 24. *Qianxian*; 25. *Rovnoe (Ambroz 1986b, No. 19; Bálint 1993, 45.)*; 26. *Rome, Santa Sabina*; 27. *Samarkand, Afrasiab*; 28. *Sivashovka (Orlov 1985, 98–105; Bálint 1993, 46.)*; 29. *Taman (Ambroz 1986b, No. 22, 23; Bálint 1993, 48.)*; 30. *Taq-e Bostan*; 31. *Ůč tepe (Ambroz 1986b, No. 7; Bálint 1993, 49.)*; 32. *Verhnaja Eshera, Pysta, (Ambroz 1986b, No. 15; Bálint 1993, 50.)*; 33. *Vinogradnoe (Komar 2006, 361.9.)*; 34. *Voznesenka (Bálint 1993, 51.)*; 34. *Xianyang (after Ambroz 1986; Bálint 1993; complemented with Chinese analogies by Koch 1998a)*





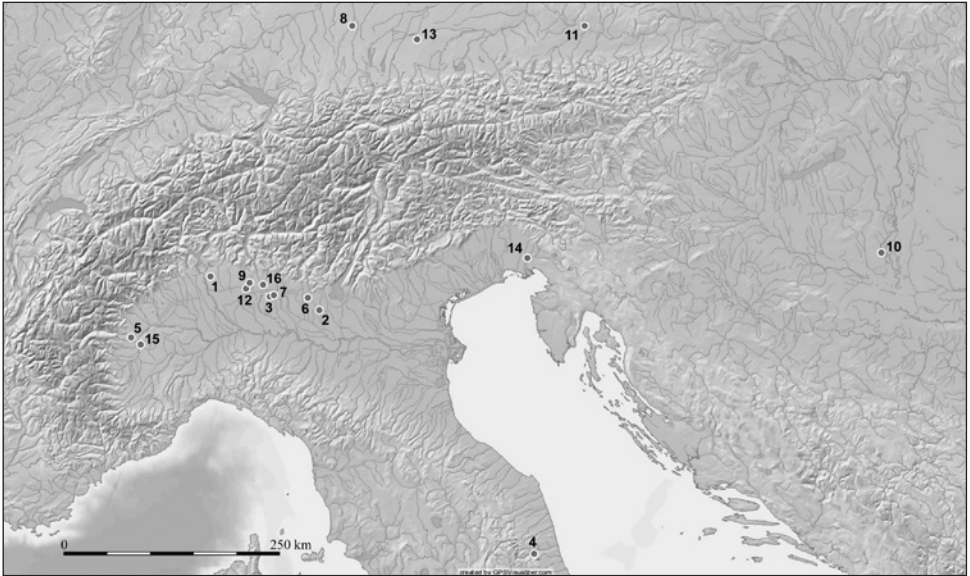
MAP 52 *Distribution of triple-arched suspension loops (S.6)*

1. Bócsa (Fettich 1937, 123, taf. CXIX. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230; Pl. XLIII/1, 11–12, Pl. XLIV–XLV/1–6; Simon 1991, 287; 15. kép 4; Garam 1993, 53–57, Taf. 4–21.); 2. Csengele–Jójárt grave No. 1 (Csallány 1939, 9–11, I. tábla 3–3a; II. tábla; Simon 1991, 290, 15. kép 8.); 3. Kecel–Schwacho föld (László 1955, 232–233, Fig. 64, Pl. LI–LII, LIII/25; Biczó 1984, 27, 56. 173. lh.; Simon 1991, 294, 15. kép 2.); 4. Kecskemét–Sallai út (H. Tóth 1980, 118, Abb. 4–6; Simon 1991, 294.); 5. Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137–138, Taf. 4–5.); 6. Kunszentmiklós–Bábony grave No. 1 (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth–Horváth 1992, 32–34, Taf. V–VIII.); 7. Mandelos (Ercegovic – Pavlović 1973–74, 108, Fig. 1, I. t. 1; Pl. III/1–3; Mrkobrad 1980, 152, LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 8. Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép.); 9. Szegvár–Oromdűlő grave No. 335, 540, 903; 10. Tiszaalpár–Tiszaiújfalu (Fettich 1926a, 8, Fig. 21; Simon 1991, 307, 15. kép 7.); Tiszaalpár–Várdomb A. sír (Fettich 1926a, 8, Pl. x/26; Bóna – Nováki 1982, 25, 98; Simon 1991, 308, 15. kép 3.); 11. Vereşmort (Rustoiu – Ciută 2008, 71–98); 12. Visegrád–Dunameder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.)



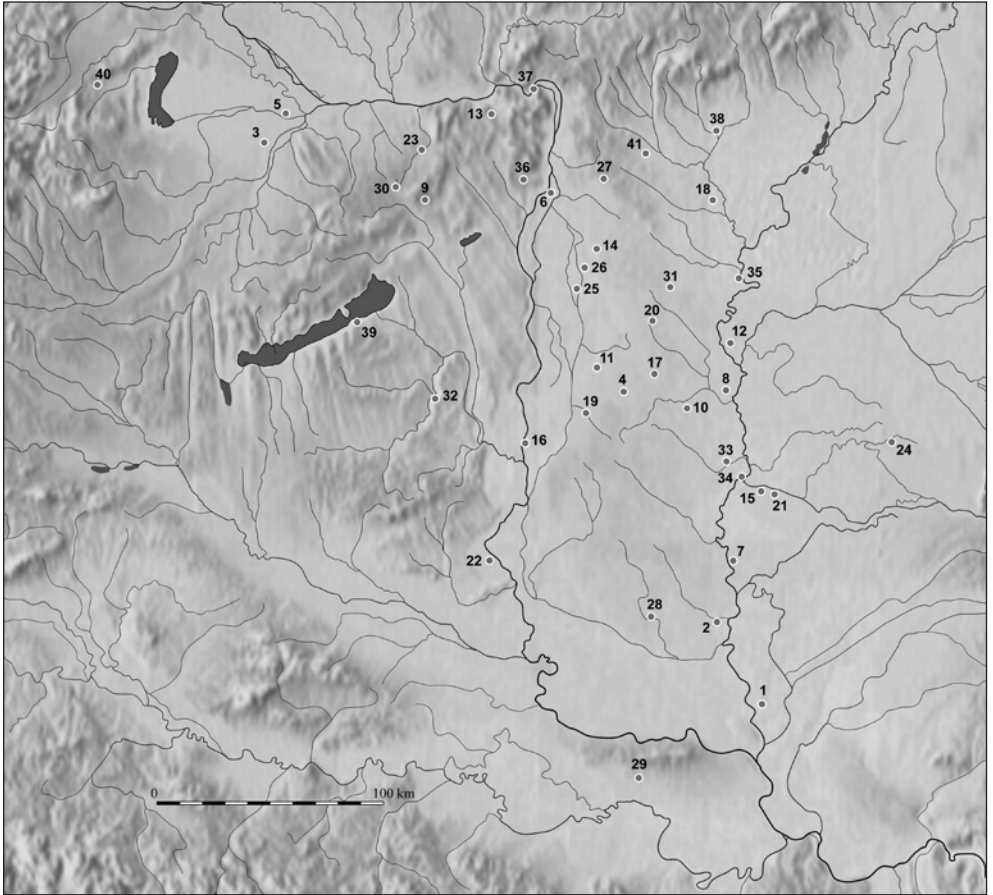
MAP 53 *Distribution of reed-shaped lanceheads in Central Europe*

1. Altenerding P grave No. 23, 416, 441, 490, 706, 1042; 2. Besigheim (Württemberg);
3. Bierstadt; 4. Borgovercelli; 5. Burgheim 7/1955; 6. Castellarano; 7. Chieming (1888);
8. Donaueschingen; 9. Donzdorf grave No. 66; 10. Dürmertingen; 11. Elgg, grave No. 25;
12. Esslingen–Sirnau grave No. 12 and 47; 13. Fornovo San Giovanni; 14. Fridingen; 15.
- Fridolfing; 16. Gablingen I, grave No. 11 and 42A; 17. Garching a. d. Alz, grave No. 78;
18. Gnotzheim, grave No. 24; 19. Hailfingen, grave No. 137, 357, 543, 568, 579, 588; 20.
- Heidenheim; 21. Hemmingen; 22. Horrheim (Württemberg); 23. Inzing; 24. Keilheim–
- Gmünd, grave No. 54–55; 25. Kirchheim am Ries; 26. Liedolsheim, Gde. Dettenheim,
- grave No. 13, 21, 22; 27. Linz–Zizlau, grave No. 74; 28. Magstadt; 29. Moos–Niederleithen;
30. Muri; 31. Murr; 32. München–Kirchtrudering, grave No. 82; 33. München–
- Untermenzing; 34. Neckargemünd; 35. Neresheim, grave No. 44; 36. Neudingen, grave
- No. 300; 37. Niederstotzingen, grave No. 3A; 38. Nocera Umbra, grave No. 84, 145;
39. Nordendorf; 40. Nosate; 41. Oberalting; 42. Oberbaar; 43. Peigen, grave No. 109;
44. Regensburg–Schwabehweis; 45. Reichenhall, grave No. 153, 324; 46. Rhein–Illkanal
- an der Thumenau; 47. Rosdorf; 48. Salgen; 49. Schretzheim, grave No. 104, 339, 557, 580;
50. Sindelfingen; 51. Sovizzo; 52. Steinheim (Albuch); 53. Testona; 54. Trezzo sull’Adda,
- grave No. 5; 55. Unterensingen; 56. Urach region; 57. Weillohe–Untermassing, grave No. 1;
58. Windisch; 59. Zeuzleben (after von Freedon 1991, Liste 2 and Schulze–Dörlamm 2006,
- 494–497, Fundliste 1.)



MAP 54 *Distribution of openwork spearheads*

1. Arsago Seprio, grave No. 13; 2. Calvisano; 3. Caravaggio, loc. Cantacuccho; 4. Castel Trosino, Marche I; 5. Collegno, grave No. 53; 6. Flero, Lombardia; 7. Fornovo S. Giovanni, loc. Mora caravaggio; 8. Inningen, Stadt Augsburg, grave No. 8; 9. Invenuro, Lombardia; 10. Kölked–Feketekapu B-82; 11. Linz-Zizlau II, grave No. 21; 12. Monza, Lombardia; 13. Poing, Lkr. Ebersberg, grave No. 6 and stray find; 14. Romans d'Isonzo, Friuli-Venezia Giulia, grave No. 245; 15. Testona, Piemonte; 16. Trezzo sull'Adda (after Will 2007, 181–193.)



MAP 55 *Distribution of edged weapons with gold and silver fittings*

1. Aradac–Mečka grave No. 85 (Nád 1959, 62, Tab. xxvii/1; Dimitrijević – Kovačević – Vinski 1962, 11; Kiss 1987, 196, Abb. 2; 203–204.)
2. Bačko Petrovo Selo–Čuk grave No. 28 (Bugarski 2009, 39, 116–117, Fig. 102, T. VI.);
3. Bágogyog grave No. 2 (Lovas 1929b, 253; Fettich 1943, 7; Simon 1991, 286.);
4. Bócsa (Fettich 1937, 123, Taf. cxix. 1; Fettich 1951, 71, Taf. LI; László 1955, 228–230, Pl. XLIII/1, 11–12, Pl. XLIV–XLV/1–6; Simon 1991, 287, 15. kép 4; Garam 1993, 53–57, Taf. 4–21.);
5. Börcs–Nagydomb grave No. 10 (Tomka 2005, 155–160.);
6. Budapest 21. –Csepel–Kavicsbánya (Fettich 1926b, 2, Pl. v/1–4; Marosi – Fettich 1936, 95; László 1942, 787–788, Abb. 40; László 1955, 135; Nemeskéri 1955, 194, 208; Sós 1961, 49; Nagy 1962, 72, 114, 173. jegyzet; Bálint 1978, 183, Abb. 7.1.5; Lipták 1983, 61, 91–94; Simon 1983, 40–42; Simon 1991, 288–289, 16. kép 13; Garam 1993, Nr. 11, 59–60, Taf. 25; Nagy 1998, I. 178–180.);
7. Čoka–Kremenjak grave No. 1 (45) (László 1943, 66–78; Kovrig – Korek 1960, 262, Fig. 6; Dimitrijević – Kovačević – Vinski 1962, 14–15; Bóna 1980, 50, Abb. 9, B, 2; Mrkobrad 1980, 98, 152, LXXIX/7; Simon 1991, 289.);
8. Csanytelek–Felgyői határút grave 'A' (Kürti 1979, 68; Kürti 1980, 1279–1280; Kürti 1983, 173, 28 kép; Kürti 1990, 79–80, 1. kép; Simon 1991, 289; Lórinczy – Szalontai 1993, 282, Taf. VII.);
9. Csákerény–Orondpuszta grave No. 150 (Kiss 1962, 70; Simon 1991, 290.);
10. Csengele–Jójiárt (Csallány 1939, 9–11, I. tábla 3–3a, II. tábla; Simon 1991, 290, 15. kép 8.);
11. Csengőd–



Páhipusztá–Kenyérvágóhalom grave No. 3 (Fettich 1926a, Taf. VI/8–20; Fettich 1926b, 265, Taf. 25; Kalmár 1944–45, 288; Sós 1961, Abb. 21; Horváth 1990, 40.); 12. Csépa (Csallány 1956, 99, 174. lh.; Simon 1991, 290; Madaras 1995, Nr. 5.); 13. Csolnok–Szedres grave No. 13 (Erdélyi 1988, 195, 203; Somlósi 1988, 207–210, Fig. 1–2; Simon 1991, 290.); 14. Dabas (Gyón)–Paphegy grave No. 1 (Simon 1987, 10. kép; Simon 1991, 290, 14. kép 6, 16. kép 12; Simon – Székely 1991, 188, 191–192, 193–195, 204.); 15. Deszk G grave No. 8 (Csallány 1939, 127, 129, I. t. 2–2a, 2. kép 2–2a; Simon 1991, 291; 16. kép 6; Lőrinczy 1994, 113–114.); 16. Fajsz–Garadomb grave No. 2 (Balogh – Kőhegyi 2001, 333–363.); 17. Gátér–Vasútállomás grave No. 212 (Kada 1906, 215, 218, c. rajz; Fettich 1926a, 8, 10, X. t. 27; Simon 1991, 292, 16. kép 20.); 18. Jászboldogháza (Madaras 1982, 64; Simon 1991, 293.); 19. Kecel–Schwacho-föld (László 1955, 232–233, Fig. 64, Pl. LI–LIII; Biczó 1984, 27, 56; Simon 1991, 294, 15. kép 2.); 20. Kecskemét–Sallai út (H. Tóth 1980, 117–152, Abb. 4–6; Simon 1991, 294.); 21. Kiszombor O grave No. 2 (Csallány 1939, 125–126, I. t. 1–1a, 2. kép. 1; Csallány 1972, 23; Simon 1991, 295, 16. kép 5; Garam 1992, 142, Taf. 35–36.); 22. Kölked–Feketekapu A grave No. 259 (Kiss 1996, 75–76, Taf. 57.); 23. Környe grave No. 75 (Salamon – Erdélyi 1971, 20, Taf. 10, Taf. 32/1, Abb. 4/1; Simon 1991, 296.); grave No. 78 (Salamon – Erdélyi 1971, 21, Taf. 12/51, Taf. 33/9; Simon 1991, 296.); grave No. 99 (Salamon – Erdélyi 1971, 23, Taf. 16, Taf. 32/2, Abb. 4/3; Simon 1991, 297, 16. kép 19.); grave No. 149 (Salamon – Erdélyi 1971, 29, Taf. 26, Taf. 32/3, Abb. 4/2; Simon 1991, 297, 16. kép 18.); 24. Kunágota (László 1938; László 1950; László 1955, LIX. t. 1; Bóna 1982–83, 88–89, 3. kép 9; Simon 1983, 37; Simon 1991, 299, 15. kép 1, 22. kép 1; Garam 1992, 137–138, Taf. 1–10, Taf. 4–5.); 25. Kunbábony (H. Tóth 1971, 15, 5. kép; H. Tóth 1972a, 150, 4. kép; Simon 1991, 300, 15. kép 5; H. Tóth – Horváth 1992, 32–34, Taf. V–VIII.); 26. Kunpeszér–Felsőpezéri út grave No. 3, 6, 8, 9, 27, 30A (courtesy of Cs. Balogh); 27. Maglód–Kertváros (Garam 2005, 405–436, 414, 9–10. kép, 427–428.); 28. Mali Idoš grave No. 72 (Gubitzsa 1907, 358–359; Dimitrijević – Kovačević – Vinski 1962, 45; Simon 1991, 301, 16. kép 16.); grave No. 84 (Gubitzsa 1911, 125, e. ábra; Dimitrijević – Kovačević – Vinski 1962, 45; Mrkobrad 1980, 152, LXXIX; Simon 1991, 301.); 29. Mandelos (Ercegović – Pavlović 1973–74, 108, Fig. 1, Pl. I/1, Pl. III/1–3; Mrkobrad 1980, 152, Pl. LXXIX/4, 8, 9; Simon 1991, 301–302, 10. kép 1, 15. kép 10.); 30. Mór–Akasztódomb grave No. 25 (Török 1954, 56–58, 4. kép, IX. t. 1; Simon 1991, 302.); 31. Nagykőrös–Szurdok (Simon 1983, 9–43, 6–20. kép, II–VII. t.; Simon 1991, 302–303, 10. kép 2, 15. kép 6, 17. kép 2, 23. kép.); 32. Szarazd (Fettich 1926a, 7, X. t. 1; Bóna 1982–83, 126–127, II. j.; Simon 1991, 305, 16. kép 3; Kovács 2001, 185, 187–190, 7. kép 10.); 33. Szeged–Kundomb grave No. 180 (Csallány 1939, 137; Kürti 1983, 189; Simon 1991, 305; Salamon – Sebestyén 1995, 28, 55, Pl. 25/5.); 34. Tápé–Kerekgyöp grave No. 11 (Simon 1993b, 31–34, 1–6. képek); 35. Tiszavárkony–Hugyin-part grave No. 20 (Kiss 1962, 18–19. XIV. t. 2, XXXVII. t. 3; Simon 1991, 308.); 36. Törökbálint site No. 36/25 grave No. 1 (Kovrig 1957, 119–120, XVII. t. 1–2, XVIII. t. 1, 26. ábra; MRT 7. 347–348; Simon 1991, 309, 16. kép 8.); 37. Visegrád–Dunameder (Tavas 1978, 175–200; Simon 1991, 310–311, 11. kép 7, 14. kép 5, 15. kép 9, 22. kép 2.); 38. Visznek–Kecskehegy grave No. 68 (Török 1975a, 334, 341, 343, Fig. 6/1, 16; Simon 1991, 311, 16. kép 9.); 39. Zamárdi–Rétiföldek grave No. 193 (Bárdos – Garam 2009, 38–39, Taf. 24/29–36.); grave No. 565 (Bárdos – Garam 2009, 83, Taf. 74/23–28.); 40. Zillngtal grave No. D-3 (Mehofer 2006, 163, Abb. D.), 41. Zsámbok grave No. 1 (Garam 1983, 140, Abb. 1/1–2, Abb. 6/1–2, Abb. 7; Simon 1991, 312, 16. kép 14.); grave No. 2 (Garam 1983, 144, Abb. 5/7, 9, Abb. 6/3, Abb. 8; Simon 1991, 312, 16. kép 7.)

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